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ABSTRACT

This report is divided into four sections. Section 1 is a short discussion of the economic theory underlying the construction of the cost of education index and an example of how the index is calculated. Also presented are descriptions of the factors included in the statistical analysis to control for quality, quantity, and cost differences and descriptions of the data used to evaluate these relations. Results of the calculation of the cost of education index for a sample of New York state school districts are presented in Section 2. The agreement among alternative methods of calculating the index and its stability across years are also evaluated. Section 3 addresses a number of questions about the cost index methodology, such as multiple measures for the same phenomenon and the number of variables in the specification. Section 4 analyzes some of the policy considerations and implications for New York State. Appendixes contain tables of determinants of costs, an index for the state, and the computation of a salary index. (Author/IRT)

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Working Paper No. 26

THE COST OF EDUCATION INDEX: MEASUREMENT OF PRICE DIFFERENCES OF EDUCATION PERSONNEL AMONG NEW YORK STATE SCHOOL DISTRICTS

by

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EXECUTIVE SUMMARY

The price of the same basket of goods and services not only changes from year to year, but the price of the same basket also can vary among the regions or school districts of a state within the same year. Spatial price differences are a particular problem for the financing of public education because they produce the dilemma of equal nominal aid dollars having unequal real purchasing power among school districts. As such, an aid formula which does not accommodate this complicating factor is not fully equalizing. An approach to this problem is to adjust aid allocations to school districts by a cost of education index. This index measures the magnitude of spatial price differentials by calculating the price of a standard education resource in each school district relative to the state average price of that resource.

Cost of education indices have been calculated for New York State. Two adjustments are presented, school district specific and regional (labor market area). Both adjustments indicate that the price of a standardized education resource tends to be highest in the New York City-Nassau-Suffolk areas. The school district specific adjustment confirms that the standardized education resource is more costly in the upstate central city school districts than in the surrounding suburban and nonmetropolitan school districts. The regional adjustment indicates that the values for the larger upstate metropolitan areas tend to be greater and the values for the smaller upstate metropolitan areas tend to be smaller than the index value for the nonmetropolitan area of the state.

It is recognized that there are a number of policy considerations related to the index. First, the index is highly correlated with household income, but there is almost no correlation with property wealth per pupil. The former suggests that cost and income adjustments need to be thought of as a pair. Second, the index values presented here range from .79 to 1.16. Districts that have index values less than one stand to be allocated relatively less state aid through this adjustment; but the relative values are the important consideration, not the actual values. Index values for the least cost district can be scaled to 1.00 with other districts being scaled accordingly. This procedure still leads to the equalization of purchasing power. Third, two adjustments are possible, school district specific and regional. The school district specific adjustment is the more precise approach because it considers more sources of price differences, but it could be problematic because neighboring school districts could have very different adjustments. The regional adjustment avoids this dilemma but overcompensates some districts and undercompensates others.

INTRODUCTION

The gap between the nominal and real value of a school district's aid receipts is a complication in the complex matter of equitable school finance. Nominal and real values differ because the prices of education resources, and therefore the cost of providing elementary and secondary education, differ among school districts. Naturally, part of the difference in the prices of these resources is due to differences in the cost of living. For instance, on average, the cost of living in the New York City metropolitan area is approximately 12 percent higher than the Buffalo metropolitan area (U.S. Department of Labor, 1979). However, the prices of education resources also differ among school districts because the nature of the work and the quality of the living environment vary.[1]

How is the purchasing power of state aid dollars to education equalized? An approach to this problem is creating a cost of education index. The cost of education index, which is based on constructs from economic theory and evaluated using standard multiple regression

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[1]School districts are not unique in this respect; it is a situation faced by many industries. Individuals working in occupations and industries in which the probability of being injured is higher than average tend to receive an extra 20 percent compensation (McLean, Wendling and Neergaard, 1978). Some employers pay special differentials to employees when the job assignment takes them into high crime neighborhoods (U.S. Department of Labor, 1975). Further, executives facing job transfers to high cost locations take cost of living factors into account in their salary expectations, and increasingly, executives are reluctant to transfer to positions in the "cold belt" without additional financial remuneration above the cost of living difference.

analysis, measures the price of a standard education resource in each school district relative to the state average price of that resource. The result is an index of the relative cost of the same basket of education resources among school districts in the state. This approach distinguishes between expenditures for education resources and the price of the same basket of education resources. Expenditures include quality, quantity and cost variations. The cost of education index neutralizes quality and quantity differences among school districts by standardizing the education resource. Consequently, the index is sensitive only to variations in the price of the resource.

This report is divided into four sections. Section I is a short discussion of the economic theory underlying the construction of the cost of education index and an example of how the index is calculated. Also presented are descriptions of the factors included in the statistical analysis to control for quality, quantity and cost differences and of the data base used to evaluate these relations. Results of the calculation of the cost of education index for a sample of New York State school districts are presented in Section II. Agreement among alternative methods of calculating the index and its stability across years also are evaluated. Section III addresses a number of questions about the cost index methodology, such as multiple measures for the same phenomenon and the number of variables in the specification. Section IV analyzes some of the policy considerations and implications for New York State.

I. THE COST OF EDUCATION RESOURCES

Economic Constructs

Two theoretical constructs underlie the determination of the unit price (cost) of an education resource. The first relates to the exchange process in the labor market between school districts and teachers or administrators (Rosen, 1974). The labor market transaction that is observed is the hiring of a teacher or an administrator at a specific salary.[2] The nature of the transaction is more complex. School districts are seeking candidates with a set of attributes in which the attributes are predetermined values such as a master's degree, three years of experience and a concentration in mathematics. The position available is characterized by another set (or sets) of attributes indicating the working conditions in the school district and the quality of life in the area. Candidates also can be broken up into a series of characteristics describing their professional qualifications and their preferences for working conditions in the school district and the quality of life in the area. Stated differently, school districts are demanding candidates with certain attributes and supplying an employment opportunity with certain working conditions in an area with a particular quality of life, whereas

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[2]One criticism raised against the market price approach is that there is no effective market for teachers; it is characterized by conditions of excess supply at current salaries and no mobility. Therefore, estimation of the market price schedule is superfluous. Market conditions should be reflected in the market price schedule through the implicit price attached to an attribute. Presumably, if teachers are in excess supply, the differential paid to equalize for negative working conditions should be smaller than under different market conditions.

candidates are supplying a set of professional characteristics and demanding certain working conditions in an area with a particular quality of life. The implicit price attached to each characteristic is determined through the interaction of supply and demand and represents the average valuation in the market of the specific attribute.[3]

The second construct relates to compensating (equalizing) differentials, which are the additional or reduced compensation paid for specific characteristics depending on whether those attributes are viewed negatively or favorably (Lucas, 1974; Brown, 1979). The conditions of employment in a competitive market must be equal. Conditions include wages, working conditions and other factors. If the working conditions of one job are less desirable than others, a wage premium must be paid to make that job equal to the other positions. For example, work hazards generally are viewed as a negative attribute of a job and therefore, a positive compensating differential must be paid to make that job competitive with a less hazardous job that is similar in all other respects. Conversely, most individuals prefer working with very bright and competent coworkers and

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[3]The interaction of supply and demand differs slightly from the usual intersecting straight lines. Rather, consider an individual who has a schedule of tradeoffs between wages and the number of students in the classroom, requiring more wages as the number of students increases. The relationship is not linear, however, because at some point the addition of another student requires a greater increment to wages. The converse holds for the opposite tradeoff. Conversely, the school district, while maintaining the same level of utility, can trade off between wages and the students per class. However, the school district is willing to pay a smaller increment in wages for increased class size after some point. A transaction occurs if the tradeoff function of a candidate is tangent to the tradeoff curve of a school district, holding other factors constant. The average price in the market is derived from the tangency points of all transactions.

therefore, a position with this characteristic may command a negative differential.[4] Not only are equalizing differentials attached to characteristics of the workplace, but they also are necessary to compensate for differences in the quality of life in an area.

On the basis of a series of labor market transactions, a market price schedule is developed. This schedule reveals the average price paid in the market for each attribute of the teacher or administrator and the average price that equalizes for differences in the characteristics of the work place and area. The market price schedule is the necessary element for calculating the cost of education index.

The key consideration is the difference between expenditures and costs. Some school districts may have relatively high expenditures per pupil because they must pay a higher price for a set of education resources, others may have high expenditures per pupil because they are purchasing more and better education resources. The cost of education methodology neutralizes the effects of quality and quantity so that the resulting index measures the relative price of providing a standardized

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[4]This example incorporates two effects. First, bright and competent workers, similar to pleasant working conditions, may make the work less burdensome. Therefore, holding all other things constant, the individual may be willing to forego some wage compensation to work under these conditions. The second effect is that there is a tradeoff between training opportunities and wages in a job (Rosen, 1972). During the early part of a person's career, he/she may be willing to forego current wages in exchange for additional training. The opportunity to work with bright and competent workers may be viewed as having a training component. Apparently, this rationale has been used by a number of top academic institutions as evidenced by the divergence between salaries for assistant professors and full professors. In fact, the salaries for assistant professors at these institutions tend to be lower than paid for the same position at institutions of lesser note.

education resource. Occasionally there is debate about whether a variable measures quality-quantity or cost. This is due to the fact that no neat classification exists; not all equalizing differentials are due just to legitimate cost factors, but may also compensate for quality-quantity differences. For instance, the number of teachers per 1,000 students is a condition of the professional environment. It also affects the quantity of education resources received by each pupil. As the number of teachers per student increases, each child has more direct exposure to the teachers and the quantity and perhaps quality of education received increases. It is expected that more teachers or administrators is a favorable working condition which would command a negative differential.[5]

Method of Calculation

The market price schedule and the actual values of those factors representing the working conditions in the school district and the quality of life in the area are combined to calculate the relative price of an education resource. On the basis of the statistical analysis, a predicted salary for a teacher or nonclassroom professional possessing a set of professional and personal characteristics is calculated. The predicted salary is calculated from the market price schedule -- implicit prices -- and the attributes of the average teacher or administrator, and the specific school district and area characteristics. To calculate the cost of education index for a teacher, the attributes of the average teacher -- who has approximately

[5]This argument has ignored the issue of elasticity of supply of teachers.

a master's degree, 10 years of experience in the school district, is tenured and works under the average conditions of 47 teachers per 1,000 students, among other factors -- are multiplied by the respective implicit price.[6] For those factors that measure school district and area characteristics that affect the quality of the living and working environment, the specific values of the district are multiplied by the respective implicit price. The predicted salary for the average teacher in New York State employed in a specific district is compared (indexed) to the predicted salary for the average teacher employed in the "average" district in the state. This ratio is the teacher cost index. This information is combined with a similar index for administrators (nonclassroom professionals) and weighted by budget shares to form a cost of education index.

This process is demonstrated by the following example. Consider a hypothetical case of two districts, A and B.[7] Assume that district A has 6,000 pupils and employs teachers who possess an average of a doctorate degree, and that district B has 2,000 pupils and employs teachers with an average of a bachelor's degree. Further, assume that a teacher with a Ph.D. tends to be paid $4,000 more per year than one with a B.A. degree, and that teachers' salaries tend to increase $.50 for each additional student.[8] (These are the approximate implicit

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[6]This discussion abstracts from the form of the dependent variable.

[7]This discussion draws heavily from Chambers (1978). The underlying mathematical formulation is presented in Appendix A.

[8]For expository simplicity, it has been assumed that this relationship continues indefinitely, which it does not.

prices found for the market price schedule of teachers in New York State). Let SAL(A) and SAL(B) equal the average salaries paid to teachers in districts A and B, respectively. Using these relationships:

SAL(A) = \$12,000 + (\$4,000 x Ph.D.) + (\$.50 x 6,000)

= \$12,000 + \$4,000 + \$3,000 = \$19,000

SAL(B) = \$12,000 + (0 x B.A.) + (\$.50 x 2,000)

= \$12,000 + 0 + \$1,000 = \$13,000

District A is paying, on average, \$19,000, and district B is paying \$13,000 for a teacher. However, in creating an index the "quality" (as represented by Degree Status in this case), should be held constant so that the variation in teachers' salaries attributable only to differences in district size can be determined. In essence, the question posed is: "What would be the relative salaries of teachers in districts A and B if both districts chose to hire the same quality teachers?" For purposes of comparison, assume that the average degree attained by employed teachers is a master's degree. Let SALA and SALB represent the predicted salaries, i.e., the salaries that districts A and B would have paid had they both purchased teachers with a master's degree. In New York State, a teacher with a master's degree tends to be paid \$1,400 more per year than one with a bachelor's degree, all other things equal. Thus,

SALA = \$12,000 + (\$1,400 x M.A.) + (\$.50 x 6,000)

= \$12,000 + \$1,400 + \$3,000 = \$16,400

SALB = $12,000 + ($1,400 x N.A.) + ($.50 x 2,000)

= $12,000 + $1,400 + $1,000 = $14,400

If the average predicted teachers' salary in the state is $15,000 (the average number of students in a school district is assumed to be 4,000), the index for districts A and B would be as follows:

Index for A = $15,400/15,000 = 1.093

Index for B = $14,400/15,000 = 0.960

The index for teachers represents only one component of the cost of education index. A similar calculation is required for administrators (nonclassroom professionals). These index values are adjusted by their respective weights in the budget to arrive at the cost of education index. For example, on average, compensation for teachers represents 64.6 percent and compensation for nonclassroom professionals accounts for 11.8 percent of approved operating expenditures per pupil in New York State. If the nonclassroom index values for district A and district B are .992 and 1.032, respectively, the cost of education index for these two districts would be calculated as follows:

District A = .646 (1.093) + .118 (0.992) + .236 = 1.059

District B = .646 (0.960) + .118 (1.032) + .236 = 0.978

Characteristics Expected to Affect Salaries of Teachers and Administrators

The variables expected to influence the salary paid to teachers and administrators are categorized into six groups and are discussed below. The categories are: (1) Personal Characteristics, (2) Professional Environment, (3) Fiscal Capacity, (4) Characteristics of Students, (5) School District Characteristics and (6) Regional

Characteristics. The discussion associated with each variable is based on the independent relationship of that factor to variations in the level of compensation and in each instance it is assumed that other factors are held constant. The theory underlying these relationships is well known and has been discussed elsewhere (see Antos and Rosen, 1975; Chambers, 1978a). Therefore, the discussion of the relationships will be limited.

The set of Personal Characteristics consists of the degree status, experience, classroom assignment, type of appointment, sex and age of the candidate. Salaries are expected to increase as the individual attains a more advanced degree or as more credits are earned. This relationship may occur because the individual is better qualified (a greater quantity of human capital is embodied in the individual) or because the school district may place a positive value on the credential without any concern over quality. In either case the value to the school is positive. Further, many collective bargaining agreements and salary schedules base compensation on the degree status. Experience is composed of two aspects: total experience and experience in the district. Generally, skills are enhanced during learning by doing (experience), and each additional year increases the stock of human capital (assuming obsolescence is not a strong force). However, this is not a linear function as years of experience after some point probably do not increase the stock of human capital. Classroom assignment measures the influence of other job opportunities on salary. Certain teaching skills, such as elementary education, are specific to the education industry, whereas others, such as chemistry or mathematics, can be transferred to other industries more readily.

Salaries paid to personnel with more transferable skills are expected to be higher because of a more favorable opportunity wage. For administrators the distinction is between district and building responsibilities. Greater responsibilities are associated with a district wide position which should be compensated positively.

Other studies have found that salaries are directly related to tenure. This outcome is somewhat contrary to intuition because tenured faculty are less mobile and may be less likely to take advantage of better opportunities. Job security has tended to be treated as a positive aspect of employment with the result that it has a negative compensating differential. The exact relationship in New York State must await the results of the statistical analysis. The implicit price for being female is expected to be negative. This relationship may occur because women may be concentrated in lower paying school districts since they tend to have fewer alternatives due to statistical discrimination. Over a certain range the implicit price of age is expected to be positive. This may occur because age and labor market information increases simultaneously, thereby increasing alternative opportunities. This relationship is expected to change after a certain age is reached when some opportunities are no longer available.

The second group of characteristics is the Professional Environment. Generally the elements in this group are the average number of teachers or administrators per 1,000 students and coverage by a collective bargaining agreement. Since less than one percent of the public elementary-secondary teachers in New York are not covered by a bargained agreement, and the data for administrators are of uncertain quality, collective bargaining has not been included as an independent

variable. The number of pupils per professional can affect the quality of instruction or supervision. As the number of professionals increases, the effort required to achieve an outcome decreases, or holding effort constant, the quality of instruction increases. A negative price should be associated with this measure.

The two elements of the group of Fiscal Capacity measures are full value of property per pupil in the school district and the average household income (measured by adjusted gross income per return). Both measures have been found to affect the ability and willingness of the community to support education financially (Adams, 1979). The relationship between these variables and the salary paid is somewhat convoluted. The influence of these measures should be reflected in the personal characteristics of those employed. For instance, the salary level of a very wealthy school district may be somewhat higher in order to attract a large pool of applicants. The candidates selected from this pool may possess certain qualifications that are not measurable, such as superb credentials in nonclassroom activities. If it is possible to measure all characteristics that might affect the quality of the candidate, it would not be necessary to include the fiscal capacity measures. Furthermore, since dummy variables are used in this study to capture common labor market characteristics and since fiscal capacity in New York State differs systematically by labor market area, the coefficient estimates may be biased if these measures are not included.

The fourth set contains the Characteristics of Students. Included as elements are the attendance ratio, the achievement test score, the proportion of students with handicapping conditions and the percent of

students with special education needs. Characteristics of the student body can be considered as an endowment of the school district. Generally, it is a feature of the district over which it has little control. Since it is an attribute of the employment position, either positive or negative compensation is required. The relationships suggested are hypothesized as the average response. The attendance ratio is expected to have a negative compensating differential as increased values of it may be indicative of a student body that has a positive attitude towards education. The achievement test score is expected to have a negative compensating differential because it too may reflect the potential working environment. Brighter students, as measured by test scores may help to create a more stimulating and rewarding environment. Percent handicapped students along with percent of students with special education needs may measure the home environment of the students, expected working conditions, and anticipated effort with the result that a positive equalizing differential may be necessary.

School District Characteristics consist of the two elements, school district size and school district size squared. A positive differential is hypothesized for school district size. This factor may represent disamenities of large schools such as lack of close working relationships, more diverse student body or perceived greater probability of injury, for which staffs must be compensated. It is hypothesized that salaries will not increase continuously at the same rate as enrollment increases, but will taper and eventually may have a negative increment for an additional student.

Regional Characteristics include elements that affect the quality of life and/or cost of living in the area in which the school district is located. Variables used to measure these differences include population density, general level of prices and a set of dummy variables to represent the labor market conditions. Population per square mile in a county may reflect cultural amenities of an area because, after it reaches a certain density or population, it is able to support some of those amenities such as museums, theaters and related activities. These features serve to enhance the attractiveness of an area, and therefore, may permit a negative differential. Conversely, these factors also may represent such undesirable features as pollution and congestion which require positive differentials. The average response will be reflected in the statistical analysis. The U.S. Bureau of Labor Statistics develops budgets that reflect the cost for a typical family of four to live in two of the metropolitan areas of New York State. In addition, they construct budgets for the nonmetropolitan area of New England. This measure does not provide enough detailed information for the entire state, so the full value of property per square mile is used. Full value per square mile is a measure of economic activity based on bid rent functions. Since land is more valuable in the central city, it will be used more intensively, which should reflect variations in some of the costs of living.[9]

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[9]The average price of agricultural land and farm buildings per acre is argued to represent the price of a single commodity, housing plus access. Within a metropolitan area, the cost of this commodity should be identical. For instance, lower housing costs in suburbs are offset by higher access costs (Tolley, 1974). However, the price of this commodity varies among metropolitan areas. This measure was not used because of the difficulty of measurement around the New York metropolitan area.

Certain features -- such as labor market opportunities, degree of competition among school districts and quality of life -- should be quite common in the same metropolitan region. For instance, with respect to the degree of competition among school districts, the traditional argument is that a school district can act as a monopsonist (monopolistic buyer) in an extremely localized market. As the geographic density of public schools increases, the necessity of staffing schools could lead districts to offer higher salaries in an attempt to raid staffs of other districts. In order for other school districts to maintain their staffing complement, they too will have to raise salaries. Thus, to capture these diverse effects, a set of dummy variables is developed, for the 10 labor market areas (LMAs) in New York state. The LMAs correspond to the standard metropolitan statistical areas (SMSAs). The dummy variable will take a value of one for a particular LMA, zero otherwise.

Sources of Data

The data sets for the cost of education resources index calculation were drawn primarily from the New York State Basic Educational Data System (BEDS), which is maintained by the New York State Education Department. Separate data sets were developed for teachers and administrators. A sample of 1 out of every 10 teachers was selected from the BEDS Personnel File system and all administrators were included. The data set was edited by deleting all observations that did not have valid salary entries; individuals not employed full time also were excluded. The resulting data sets consisted of observations on 20,534 teachers and 13,604 nonclassroom professionals

for 1977-78. For 1974-75 the number of observations were 18,713 and 16,173 for teachers and administrators, respectively.

The Personnel File provided age, sex education, experience, classroom assignment and appointment information for the individual. The data on individual teachers was merged with school district level and regional information. The school district level information was obtained from three sources: the Bureau of Education Finance Research, the New York State Consolidated Data Base, which also is developed from the Basic Educational Data System and the Annual Financial Planning Report of the New York State Department of Audit and Control. In addition, several regional variables were collected from published documents of the United States Bureau of the Census.

The relationships between the independent variables and the dependent variable -- the salary of the individual teacher or nonclassroom professional -- were estimated using ordinary least squares multiple regression analysis. In both instances the dependent variable was specified as its natural logarithm. Independent variables were measured either by their actual value or by their natural logarithm, depending on the theoretical arguments.

II. RESULTS FOR NEW YORK STATE

Results of the Statistical Analysis

The implicit prices attached to attributes of professionals, the workplace and the area generally conform to theoretical expectations and are consistent with results reported elsewhere. The market price schedules for both teachers and administrators for the 1977-78 and 1974-75 school years are reported in Appendix B. Several examples of implicit prices -- coefficient estimates -- for the 1977-78 school year are presented here. For instance, the implicit price attached to an M.A. degree relative to a B.A. degree for teachers is approximately $1,400, assuming that they are equal in all other respects.[10] For administrators the market price of an M.A. degree was approximately $2,400 more than a B.A. degree, holding everything else constant.

The measure of experience is divided into total experience and experience in the current district. Because New York State's education system is relatively mature, it is characterized by no expansion in the number of positions. Job openings occur only as individuals retire or leave the profession and these openings generally are entry level positions. Since there is little transferring of teachers among school districts, total experience differs little from experience in the district. The extent of correlation between the two experience measures is .879 for teachers and .761 for administrators. Since these

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[10] This value is quite similar to the B.A.-M.A. differential observed in salary schedules. In Binghamton the starting differential is $750, but in Great Neck the differential is $1,893. In Poughkeepsie and Syracuse the starting differentials are $1,572 and $1,185 respectively, for an average differential for these districts of $1,350.

two measures are so highly correlated, it is necessary to sum the effects to derive the implicit price of an additional year of experience. Doing so suggests that each additional year of experience for a teacher results in an additional $700 to $750 salary compensation, but additional years of experience squared reduce it by approximately $30, holding all other things constant.[11] For administrators each year results in approximately an $860 increase.

Student Characteristics represent the endowment of school districts. The student body comes with the school district and there is little the district can do to alter the characteristics of it. The coefficient of attendance ratio is positive, which is contrary to theoretical expectations. A similar finding holds for the achievement score. The estimate for percent handicapped is positive, as expected, statistically significant and indicates that a one percent increase in handicapped students is associated with an additional $19 salary for teachers. The additional compensation for a one percent increase in pupils with special education needs is $15. For administrators a one percent increase in handicapped students is associated with an additional $22 in salary.

Perhaps due to certain disamenities associated with larger school districts, employees tend to require positive equalizing differentials. The estimates reported here indicate that a one percent increase in the number of students is associated with $25 and $48 additional

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[11]The corresponding figures from salary schedules range from $350 in Binghamton to $630 in Great Neck, for a teacher with a M.A. degree. However, in Great Neck the increase for a teacher with a M.A. + 30 credits after some experience is $883. So, on average, the values seem consistent.

compensation for teachers and administrators, respectively. This breaks down to an additional $.50 and $1, respectively, for each student, holding all other things constant. However, this relationship does not increase indefinitely as indicated by the negative sign on the squared term.

The primary measure of regional differences is the set of labor market area variables. They measure differences in the cost of living, labor market pressures and certain quality of life factors. For instance, teachers in the Nassau-Suffolk area are compensated about 20 percent more and administrators about 16 percent more than they are in the nonmetropolitan areas of the state, holding other factors constant. In Rochester the additional compensation above the nonmetropolitan area is eight percent for teachers and seven percent for administrators.

Cost of Education Index Calculations for a Sample of School Districts

The cost of education index associated with the market price schedule for the 1977-78 school year developed by using information on individuals is listed in Table 1 for a sample of 23 school districts. Only those characteristics included in the categories, Student Characteristics, School District Characteristics and Regional Characteristics, whose coefficient estimates meet standard levels of reliability and conform to theoretical expectations vary by school district in the index calculation. A complete listing of the index values for all school districts, based on this market price schedule, is provided in Appendix C.

The index values tend to be highest in the school districts in the New York City and Nassau-Suffolk metropolitan areas. The values

cluster around 1.00 in the other metropolitan school districts (particularly the major ones) and tend to be somewhat lower for those school districts located in the nonmetropolitan areas. Upstate central cities tend to have relatively higher index values, particularly relative to surrounding suburban school districts (Albany and Niskayuna; Buffalo and Kenmore; Rochester and West Irondequoit; Syracuse and Oswego).

Another interesting feature is the relationship among school districts in the same downstate county. The school districts of Great Neck, Levittown, Long Beach and Roosevelt have very similar values, indicating the strong influence of common regional cost factors. The index value in Levittown, however, is greater than Great Neck's, which indicates that other cost factors also affect the index. A similar relationship holds for the Mount Vernon, White Plains and Yonkers school districts. Yonkers' value is greater than White Plains' value, which also demonstrates the role of equalizing differentials.

The index for New York City is somewhat greater than the average for school districts in Nassau County but less than the average for Westchester County. Since Westchester County is in the same labor market area as New York City, this difference probably reflects the influence of district size. The extra compensation due to the number of students reaches its maximum at approximately 48,000 and diminishes after that. Therefore, the extra compensation for district size is greater for the Yonkers system with approximately 25,000 students than it is for the New York City system with 965,000 students.

Summary statistics of the index for all school districts are reported in Table 2. The standard deviation is relatively small

Table 1

COST OF EDUCATION INDEX FOR A SAMPLE OF SCHOOL DISTRICTS, 1977-78

(based on the market price schedule calculated for individuals)

	Teacher Index	Administrator Index	Cost of Education Index
Albany	.96	.95	.97
Bay Shore	1.13	1.09	1.09
Buffalo	1.03	1.04	1.02
Camden	.87	.84	.90
Canastota	.88	.86	.91
Chenango Forks	.83	.86	.88
Great Neck	1.14	1.10	1.10
Kenmore	.99	1.00	1.00
Levittown	1.15	1.12	1.11
Long Beach	1.14	1.10	1.10
Mount Vernon	1.20	1.18	1.15
Newburg	.95	.97	.97
New York City	1.17	1.12	1.13
Niskayuna	.92	.90	.94
Oswego	.92	.90	.94
Peru	.91	.91	.93
Rochester	1.07	1.08	1.05
Roosevelt	1.14	1.09	1.10
Salamanca	.89	.88	.92
Syracuse	.96	.95	.97
West Irondequoit	1.00	1.00	1.00
White Plains	1.21	1.18	1.15
Yonkers	1.22	1.21	1.17

Table 2

SUMMARY STATISTICS FOR THE COST OF EDUCATION INDEX

Mean	.951
Standard Deviation	.083
Minimum	.791
Maximum	1.163

compared to the mean value, and indicates that 67 percent of the school districts have values that lie between .87 and 1.03. The range of values also is reasonable given the diversity of New York State. Furthermore, the mean value of the index indicates a concentration of districts at the lower end of the cost spectrum.

An alternative to a district by district adjustment is a regional cost of education adjustment. The regional cost index for the labor market areas and the nonmetropolitan area is listed on Table 3. Because the index is to measure the price variations of education personnel, utilizing labor market areas as regions seems to be an appropriate and intuitive approach. The regional index incorporates primarily differences in the cost of living, labor market alternatives, certain quality of life factors and working conditions across the labor market areas. Since student characteristics and district size probably vary as much within a region as across regions, the influence of these factors on the index is likely to be small. Although not presented here, it also is possible to separate out categories of cost factors so that an index reflects only regional differences or only school district differences.

The cost in terms of time, needed data and fiscal resources of developing and calculating the above index is not insubstantial. The method of computing the market price schedule and the index presented in Table 1 requires detailed information on individual teachers and administrators, and can be computationally expensive. It is the theoretically preferred and most precise approach, and therefore must serve as the basis of any comparison. If a less expensive approach can produce approximately equal results, it may be justified to trade off

theoretical purity for resource efficiency. An alternative approach is to use district level information for the personal and professional characteristics. The median district salary is substituted for individual salaries, and the average experience level and the proportion of the faculty by education attainment are substituted for individual years of experience and degree status, respectively. Furthermore, the hedonic approach is not utilized, but instead the analysis is placed in a traditional supply and demand structure.[12]

This issue has been addressed and a sample of the results in which district averages have been substituted for the personal and professional attributes of individuals are listed in Table 4. It appears that the actual values have been shifted upward by several points. The Albany school district has a value of .97 using individual data and 1.01 for district level data. The respective values for Yonkers are 1.17 and 1.22. The summary statistics reported in Table 5 confirm the shift. The mean value is greater, but the deviation is identical. However, the range between minimum and maximum values is less. On average, the relative values among the school districts

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[12]Using district level data for personal and professional attributes implies the more traditional approach of supply and demand. Wages of school personnel and quantity employed are determined through the interaction of supply and demand. The demand for school personnel is derived from the output of schools. For instance, a community may view the output of schools as very important and have a strong demand for school personnel, if they are viewed as productive inputs. Like other goods and services, the location of the demand curve is a function of income, the prices of substitutes and complements as well as tastes. The supply of personnel to a particular school district is not assumed to increase as the salary increases; it is assumed that sufficient numbers will apply if the reservation wage is less than, or equal to, the market clearing wage. The assumption of perfectly elastic supply is critical because it simplifies the classification of variables into cost and noncost factors, respectively.

are quite similar to those reported in Table 1. The pairwise correlation between the two sets of index values for all school districts is .978 (see Table 6), which confirms the casual observation based on the sample of districts.[13]

Table 3

A REGIONAL COST OF EDUCATION INDEX

Labor Market Areas	Regional Cost of Education Index
New York City-Putnam-Rockland-Westchester LMA	1.19
Nassau-Suffolk LMA	1.15
Albany-Schenectady-Troy LMA	1.00
Binghamton LMA	.95
Buffalo	1.03
Elmira	.94
Poughkeepsie LMA	1.06
Rochester LMA	1.06
Syracuse LMA	.99
Utica-Rome LMA	.96
Nonmetropolitan LMA	1.00

Also related to the issue of the cost of developing an index is the stability of the index over time. Does a cost index need to be calculated every year or are labor market transactions stable enough that the relative values of the index do not change significantly over a several year time span? This question also has been addressed. Indices for the 1974-75 school year employing both the individual and

[13]Although the correlation is quite high, it may result in a different aid distribution particularly when pupil weightings are considered. For instance, the index for New York City is 1.13 in both Tables 1 and 4. However, the index of Great Neck is .07 points greater, using district information rather than data on individuals. It could be inferred that 965,000 students would incur a relative aid loss using the district based measures.

Table 4

COST OF EDUCATION FOR A SAMPLE OF SCHOOL DISTRICTS, 1977-78

(based on the statistical analysis for school district measures)

	Teacher Index	Administrator Index	Cost of Education Index
Albany	1.00	1.08	1.01
Bay Shore	1.20	1.25	1.16
Buffalo	1.04	1.15	1.04
Camden	.96	1.00	.97
Canastota	.95	.98	.97
Chenango Forks	.91	.98	.94
Great Neck	1.22	1.29	1.18
Kenmore	1.04	1.17	1.04
Levittown	1.23	1.30	1.18
Long Beach	1.22	1.24	1.17
Mount Vernon	1.27	1.36	1.22
Newburg	1.01	1.12	1.02
New York City	1.21	.90	1.13
Niskayuna	.99	1.02	1.00
Oswego	.98	1.07	.99
Peru	.97	1.04	.99
Rochester	1.07	1.17	1.06
Roosevelt	1.21	1.24	1.16
Salamanca	.95	.98	.97
Syracuse	1.02	1.11	1.03
West Irondequoit	1.04	1.12	1.04
White Plains	1.26	1.39	1.22
Yonkers	1.28	1.38	1.22

Table 5

SUMMARY STATISTICS FOR THE COST OF EDUCATION INDEX

Mean	1.002
Standard Deviation	.083
Minimum	.878
Maximum	1.173

Table 6

CORRELATIONS OF COST INDICES ACROSS MODELS AND YEARS

	District (1977-78)	Individuals (1974-75)
Individuals (1977-78)	.978	.988
Districts (1974-75)	.981	

district approaches were calculated. The statistical analyses and indices for the sample of districts are presented in Appendix B. The correlation across this time span for both models indicates a very stable situation. Specifically, as reported in Table 6, the correlation across years for the index calculated using individual data is .988 and it is .981 for the index constructed using district data. However, these results should be considered specific to New York State for this time period and should not be generalized to all states.

An alternative index is the total cost index. The total cost index compares the relative cost of providing the same quality of education across school districts rather than the prices of the same basket of education resources. As such, it is not directly concerned with the price of education personnel. One feature of this approach is that the minimum cost per pupil size of school district can be determined as well as the additional expenditures due to increased handicapped or special needs students. Research also was conducted on this approach, but the results have not been encouraging. Specifically, the coefficient estimates have not been stable across estimates and have indicated some unintuitive results. For instance, according to one estimate, the most efficient size school district is 7 million students! The measurement of quality also is a major

difficulty in applying this approach. Therefore, because of the unstable estimates and difficulty in measuring the quality of a school district, a total cost index has not been included in this report.[14]

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[14]Achievement test scores, percent below minimum competency and percent of graduates attending degree granting institutions were used to measure the quality of the school. The ideal way to measure quality would be to estimate the marginal contribution of education resources to achievement of students (if achievement is an acceptable measure of quality). The contribution of the resources to quality in the ith school district would be included in the total cost estimating equation.

III. CLARIFICATION OF SOME METHODOLOGICAL ISSUES

The cost of education index approach has not been endorsed by all policy makers and education leaders as the correct method for adjusting for spatial price differentials. Criticisms of the index are due to its complex methodology and to policy considerations. This section attempts to clarify the methodological questions. Addressed, in turn, are: (1) the perceived ability to manipulate the index by changing the specification of the equation and (2) the number of variables included in the specification. Policy considerations are addressed in the following section.

The perceived ability to manipulate the index arises from what might be called a measurement problem. This problem occurs because economic theory hypothesizes a phenomenon -- a relationship -- but does not indicate the best measure for it. For example, it is hypothesized that, all other things being equal, teachers and administrators are likely to consider the socioeconomic-academic quality of the student body as a characteristic of the employment opportunity, demanding extra compensation to work in a school district where, on average, the students' parents rank low on a socioeconomic scale or where the academic achievement is expected to be relatively low. However, a priori, the best measure or measures of this phenomenon are not known. Is it the percent of students with special education needs, percent of students whose parents are on welfare, the achievement test scores, the percent of graduates attending degree granting institutions, the dropout rate, the percent of minority group members, the percent of students that are handicapped or is it the attendance ratio? The best

measure or measures can only be determined by estimating alternative specifications and checking the signs, statistical significance and simple correlations of the variables. Different measures should not be included just to find the one or two that generate the cost index most satisfactory in the policy constraints. Instead, the measures that are selected must have theoretical validity and have a coefficient estimate whose value is plausible, both according to theoretical arguments and institutional considerations. The set of measures satisfying these requirements cannot be established until alternative specifications are tested.

The number of variables used in the regression analysis is due to the necessity of specifying the most complete model possible and, in New York State, to the richness of the New York State Personnel File. A complete model specification reduces the possible bias in the coefficient estimates due to correlations from left out variables. If all factors affecting quality are included in the equation, the estimates of the implicit prices attached to the cost factors will be more accurate, as will be the actual calculation of the index. The New York State Personnel File provides excellent detail on the professional and personal characteristics, such as education, experience, labor market attachment, assignment, age and sex, of teachers and nonclassroom professionals in New York State. Over 20 variables are used to measure a teacher's professional and personal characteristics; this type of detail permits the estimation of a precise market price schedule for the professional and personal characteristics.

IV. POLICY IMPLICATIONS

The range and direction of the index values conform to intuitive feelings of cost differentials throughout the State.[15] On average, lower values are observed in the upstate school districts and the higher values are observed in the downstate school districts. The index values for the upstate central city school districts tend to be higher than those in the surrounding labor market area, which is consistent with observations that central cities are overburdened with students having special education problems and needs.

The pattern of higher index values downstate and lower values upstate crystalizes another issue: the relationship between the cost of education index, property wealth per pupil and household income. Property wealth per pupil and household income are approximately 40 percent and 25 percent greater, respectively, downstate than upstate. In fact, the correlation between the index and property wealth per pupil is .086, indicating almost no relationship. However, the correlation between the index and income is .619. The implication is

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[15]The range of values is somewhat greater than those reported for the teacher index in Missouri (see Chambers, Odden and Vincent, 1976), but similar to the range for the teacher index in California (Chambers, 1978b). The average teacher index value for school districts located in metropolitan areas of more than 500,000 population in California was 1.10 and it was .96 in nonmetropolitan areas. The State of Missouri is not as diverse as New York State. According to the Bureau of Labor Statistics, in autumn 1977 the cost of living in the Kansas City metropolitan area and the St. Louis metropolitan area were 4.9 percent and 3.6 percent greater, respectively, than in the nonmetropolitan area of the region. In the California cities of San Francisco and Los Angeles, the cost of living is approximately 15 percent and 9 percent greater, respectively, than the nonmetropolitan areas. The difference for the New York City and Buffalo metropolitan areas in 1977 were 19.63 percent and 8.02 percent, respectively.

that many low income areas will receive less state aid when a cost index is used, holding other things constant. Therefore, a cost index and an income factor need to be thought of as a pair since an income factor would increase aid to low income areas and many of the same districts that would lose aid through a cost adjustment.

A fact of life is that the cost of education index will receive little support from those districts that stand to be eligible for relatively less operating aid because their index value is less than 1.00. From a theoretical perspective, the exact values of the index are not critical, rather the relative values are. If they are maintained, the real purchasing power of the dollar will be equalized. One solution is to scale the lowest index values to 1.00 and adjust other values upward accordingly. For instance, using the values in Table 1, Salamanca would be scaled to 1.00, Rochester to 1.14 and Levittown to 1.21. Scaling could reduce some of the opposition to the index, while achieving the general purpose of the cost adjustment: equalizing the purchasing power of the education dollar.

The governing unit at which the cost adjustment should be made is another important issue. Should the index be a district by district one or a regional one? A regional index reflects common regional or area characteristics and avoids the dilemma of different adjustments for neighboring school districts. However, it is a broad adjustment and overcompensates some school districts and undercompensates others because it does not account for all differences among school districts in their student population, school district size and community characteristics. A district by district adjustment reflects all cost differences and leads to a more equitable system of financing schools.

It is handicapped, though, because it could be problematic and does not have the intuitive appeal due to its emphasis on student characteristics and size. The regional index reported above, though, is normed relative to the rural (nonmetropolitan) districts; thus, the value in most instances is 1.0 or greater.

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APPENDIX A

COMPUTATION OF A SALARY INDEX

For a Log_e linear equation:

Specify the market price schedule for teachers by

$$LOG_e\ SAL = a + BX + CY$$

where X is the vector of controllable variables, Y is the vector of uncontrollable variables and B and C are vectors of prices. To calculate the index of teacher costs, the variables in vector X are held constant at the state average values, while the variables in vector Y are permitted to vary across districts. Because the salary has been specified as its natural logarithm, the difference between the state average salary and the salary in the particular district is:

$$LOG_e\ SAL_i - LOG_e\ \overline{SAL} = (a + B\overline{X} + CY_i) - (a + B\overline{X} + C\overline{Y})$$

where the bars indicate mean values in the state. The above equation can be rewritten as:

$$LOG_e\ (SAL_i/\overline{SAL}) = C(Y_i - \overline{Y})$$

The index is then given by

$$SAL/\overline{SAL} = EXP\ (C\ (Y_i - \overline{Y})) = INDEX_i$$

For a linear equation:

The process is similar. Specify the market price schedule as

$$SAL = a + BX + CY$$

where the variables are as defined previously. The ratio of the district predicted salary to the state predicted salary is:

$$SAL/\overline{SAL} = (a + B\overline{X} + CY_i)/(a + B\overline{X} + C\overline{Y})$$

APPENDIX B

DETERMINANTS OF SALARIES IN NEW YORK STATE SCHOOL DISTRICTS: SAMPLE COST INDICES

Table B1

DETERMINANTS OF TEACHERS' SALARIES IN NEW YORK STATE, 1977-78
[Dependent Variable = Log(e) (Teacher Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: No Higher Ed	.111*	11.74	1,975
Education: No BA Degree	.039*	3.98	669
Education: BA Degree	---	---	---
Education: BA + 30 Credits	.043*	4.39	739
Education: MA Degree	.079*	8.22	1,383
Education: MA + 30 Credits	.147*	15.84	2,664
Education: Doctorate Degree	.201*	22.26	3,745
Experience: Total Years	.034*	3.46	582
Experience: Total Years Squared	-.001*	- .18	- 30
Experience This District: Total Years	.010*	1.00	168
Total Years Squared	-.000*	- .00	- 00
Assignment: Elementary Ed	---	---	---
Assignment: Special Ed	.004	.40	67
Assignment: Humanities	.002	.20	34
Assignment: Math-Science	.006*	.60	101
Assignment: Social Science	-.001	- .09	- 15
Assignment: Industrial Arts	.003	.30	50
Assignment: Physical Ed	-.003	- .29	- 49
Assignment: Fine Arts	.003	.30	50
Assignment: Occupational	.009*	.90	151
Appointment: Tenured	.046*	4.71	791
Appointment: Probationary	---	---	---
Appointment: Substitute	-.072*	- 6.95	- 1,169
Sex: Male	.020*	2.02	340
Sex: Female	---	---	---
Age	.005*	.60	101
Age Squared	-.000*	- .00	- 00
PROFESSIONAL ENVIRONMENT			
Teachers Per 1,000 Students	-.000	- .00	- 00
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.040*	.04	7
Log(e) Gross Income Per Return	.076*	.08	13

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
STUDENTS' CHARACTERISTICS			$
Attendance Ratio	.942*	.942	158
Combined Reading/Math Test Score	.001*	.100	17
Handicapped Students (percent)	.104*	.104	17
Pupils with Special Education Needs (percent)	.092*	.092	15
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.151*	.151	25
Log(e) District Size Squared	-.007*	- .014	- 2
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.005*	.005	1
Log(e) Full Value Per Square Mile	-.001*	- .001	- 0
New York City LMA	.222*	24.86	4,180
Nassau-Suffolk LMA	.180*	19.72	3,317
Albany-Schenectady-Troy LMA	.000	.00	00
Binghamton LMA	-.079*	- 7.60	- 1,278
Buffalo LMA	.040*	4.08	686
Elmira LMA	-.083*	- 7.96	- 1,340
Poughkeepsie LMA	.072*	7.47	1,256
Rochester LMA	.073*	7.57	1,274
Syracuse LMA	-.012*	- 1.19	- 201
Utica-Rome LMA	-.044*	- 4.50	- 757
Nonmetropolitan LMA	—	—	—
Intercept	6.165		$ 476

Mean Salary = $16,820 N = 20,534 R = .8698 F-Statistic = 3111.292
* = Statistical Significance at 0.10 Level S.E.E. = .0959

The salary of the typical teacher is simulated from this equation. Variables on the first page of this table are evaluated at the state average value and variables on the second page are evaluated at the specific value for the school district. The figures in the column, Percentage Effect Salaries, represent the percentage effect on teachers' salaries for the dummy variables (education, assignment, appointment, sex, age and labor market area) and the elasticity for the variables in natural log or percentage form. For the variables of experience, teachers per 1,000 students and test score, that column reflects the percentage effect of a one unit increase.

Table B2

DETERMINANTS OF ADMINISTRATORS' SALARIES
IN NEW YORK STATE, 1977-78
[Dependent Variable = Log(e) (Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: No Higher Ed	-.076*	- 7.32	- 1,626
Education: No BA Degree	-.119*	-11.22	- 2,493
Education: BA Degree	—	—	—
Education: BA + 30 Credits	.103*	10.85	2,411
Education: MA Degree	.156*	16.88	3,751
Education: MA + 30 Credits	.211*	23.49	5,219
Education: Doctorate Degree	.307*	35.93	7,984
Experience: Total Years	.039*	3.98	884
Experience: Total Years Squared	-.001*	- .20	- 44
Experience This District: Total Years	-.000	- .00	- 0
Total Years Squared	.000	.00	0
Assignment: Principal	—	—	—
Assignment: Superintendent	.076*	7.90	1,755
Appointment: Tenured	.249*	28.27	6,283
Appointment: Probationary	.256*	29.18	6,483
Appointment: Substitute	.150*	16.18	3,596
Appointment: Contract	.324*	38.26	8,502
Appointment: Civil Service	—	—	—
Sex: Male	.108*	11.40	2,534
Sex: Female	—	—	—
Age	.011*	1.11	246
Age Squared	-.000*	-.00	- 0
PROFESSIONAL ENVIRONMENT			
Administrators Per 1,000 Students	-.001*	- .09	- 22
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.044*	.04	9
Log(e) Gross Income Per Return	.083*	.08	18

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
STUDENTS' CHARACTERISTICS			$
Attendance Ratio	.961*	.961	214
Combined Reading/Math Test Score	-.001*	- .090	- 22
Handicapped Students (percent)	.101*	.101	22
Pupils with Special Education Needs (percent)	-.061	- .061	- 14
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.218*	.218	48
Log(e) District Size Squared	-.010*	- .020	- 4
REGIONAL CHARACTERISTICS			
Log Population Density in County	.001	.001	0
Log(e) Full Value Per Square Mile	-.005*	- .004	- 1
New York City LMA	.200*	22.14	4,919
Nassau-Suffolk LMA	.151*	16.30	3,622
Albany-Schenectady-Troy LMA	-.015*	- 1.50	- 331
Binghamton LMA	-.042*	- 4.11	- 914
Buffalo LMA	.033*	3.36	746
Elmira LMA	-.062*	- 6.10	- 1,357
Poughkeepsie LMA	.093*	9.75	2,166
Rochester LMA	.069*	7.14	1,587
Syracuse LMA	-.037*	- 3.44	- 764
Utica-Rome LMA	-.075*	- 7.22	- 1,606
Nonmetropolitan LMA	—	—	—
Intercept	5.572		263

Mean Salary = $22,220 N = 14,635 R = .7326 F-Statistic = 1025.534
* = Statistical Significance at 0.10 Level S.E.E. = .1618

The salary of the typical administrator is simulated from this equation. Variables on the first page of this table are evaluated at the state average value and variables on the second page are evaluated at the specific value for the school district. The figures in the column, Percentage Effect Salaries, represent the percentage effect on administrators' salaries for the dummy variables (education, assignment, appointment, sex, age and labor market area) and the elasticity for the variables in natural log or percentage form. For the variables of experience, administrators per 1,000 students and test score, that column reflects the percentage effect of a one unit increase.

Table B3

DETERMINANTS OF TEACHERS' SALARIES IN NEW YORK STATE, 1974-75
[Dependent Variable = Log(e) (Teacher Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: No Higher Ed	.050*	5.13	704
Education: No BA Degree	.013*	1.31	180
Education: BA Degree	—	—	—
Education: BA + 30 Credits	.055*	5.65	777
Education: MA Degree	.094*	9.86	1,354
Education: MA + 30 Credits	.166*	18.06	2,481
Education: Doctorate Degree	.200*	22.14	3,043
Experience: Total Years	.034*	3.46	475
Experience: Total Years Squared	-.001*	- .19	- 27
Experience This District: Total Years	.006*	.60	83
Total Years Squared	-.000*	- .00	- 0
Assignment: Elementary Ed	—	—	—
Assignment: Special Ed	.005	.05	69
Assignment: Humanities	-.000	- .00	- 0
Assignment: Math-Science	.008*	.08	110
Assignment: Social Science	-.002	- .19	- 27
Assignment: Industrial Arts	-.003	- .29	- 41
Assignment: Physical Ed	-.002	- .19	- 27
Assignment: Fine Arts	-.002	- .19	- 27
Assignment: Occupational	.008*	.08	110
Appointment: Tenured	.039*	3.97	547
Appointment: Probationary	—	—	—
Appointment: Substitute	-.055*	- 5.35	- 735
Sex: Male	.025*	2.53	348
Sex: Female	—	—	—
Age	.008*	.08	110
Age Squared	-.000*	- .00	- 0
PROFESSIONAL ENVIRONMENT			
Teachers Per 1,000 Students	.000	.00	0
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.031*	.03	4
Log(e) Gross Income Per Return	.071*	.07	8

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
STUDENTS' CHARACTERISTICS			$
Attendance Ratio	.627*	.627	86
Combined Reading/Math Test Score	-.001*	- .09	- 13
Handicapped Students (percent)	-.110*	- .110	- 15
Pupils with Special Education Needs (percent)	.036*	.036	5
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.110*	.110	15
Log(e) District Size Squared	-.005*	- .010	- 1
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.003*	.003	0
Log(e) Full Value Per Square Mile	.001*	.001	0
New York City LMA	.175*	19.12	2,627
Nassau-Suffolk LMA	.157*	16.99	2,336
Albany-Schenectady-Troy LMA	.007*	.70	96
Binghamton LMA	-.050*	- 4.87	- 670
Buffalo LMA	.025*	2.53	348
Elmira LMA	-.051*	- 4.97	- 683
Poughkeepsie LMA	.051*	5.23	719
Rochester LMA	.052*	5.34	733
Syracuse LMA	-.050*	- 4.88	- 670
Utica-Rome LMA	-.081*	- 7.78	- 1,069
Nonmetropolitan LMA	—	—	—
Intercept	6.691		$ 805

Mean Salary = $13,742 N = 18,713 R = .9063 F-Statistic = 4,101.406
* = Statistical Significance at 0.10 Level S.E.E. = .0805

The salary of the typical teacher is simulated from this equation. Variables on the first page of this table are evaluated at the state average value and variables on the second page are evaluated at the state specific value for the school district. The figures in the column, Percentage Effect Salaries, represent the percentage effect on teachers' salaries for the dummy variables (education, assignment, appointment, sex, age and labor market area) and the elasticity for the variables in natural log or percentage form. For the variables of experience, teachers per 1,000 students and test score, that column reflects the percentage effect of a one unit increase.

Table B4

DETERMINANTS OF ADMINISTRATORS' SALARIES
IN NEW YORK STATE, 1977-78
[Dependent Variable = Log(e) (Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: No Higher Ed	-.236*	-21.02	- 3,925
Education: No BA Degree	-.112*	-10.60	- 1,979
Education: BA Degree	—	—	—
Education: BA + 30 Credits	.088*	9.20	1,718
Education: MA Degree	.149*	16.07	3,000
Education: MA + 30 Credits	.204*	22.63	4,226
Education: Doctorate Degree	.321*	37.85	7,068
Experience: Total Years	.032*	3.25	607
Experience: Total Years Squared	-.000*	- .00	- 0
Experience This District: Total Years	.000	.00	0
Total Years Squared	.000	.00	0
Assignment: Principal	—	—	—
Assignment: Superintendent	.068*	7.04	1,314
Appointment: Tenured	.152*	16.42	3,065
Appointment: Probationary	.110*	11.63	2,171
Appointment: Substitute	.021*	2.12	396
Appointment: Contract	.226*	25.36	4,735
Appointment: Civil Service	—	—	—
Sex: Male	.121*	12.86	2,402
Sex: Female	—	—	—
Age	.018*	1.82	339
Age Squared	-.000*	-.00	0
PROFESSIONAL ENVIRONMENT			
Administrators Per 1,000 Students	-.002*	- .19	37
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.030*	.03	6
Log(e) Gross Income Per Return	.071*	.07	13

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
STUDENTS' CHARACTERISTICS			
Attendance Ratio	.582*	.582	109
Combined Reading/Math Test Score	-.000	- .000	- 0
Handicapped Students (percent)	-.122*	- .122	- 23
Pupils with Special Education Needs (percent)	-.017	- .017	- 3
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.131*	.131	24
Log(e) District Size Squared	-.006*	- .012	- 2
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.004	.004	1
Log(e) Full Value Per Square Mile	-.000	- .000	- 0
New York City LMA	.174*	19.01	3,549
Nassau-Suffolk LMA	.147*	15.84	2,975
Albany-Schenectady-Troy LMA	.022*	2.22	415
Binghamton LMA	-.023*	- 2.27	- 425
Buffalo LMA	.017*	1.71	320
Elmira LMA	-.030*	- 2.96	- 522
Poughkeepsie LMA	.042*	4.29	801
Rochester LMA	.047*	4.81	899
Syracuse LMA	-.052*	- 5.07	- 946
Utica-Rome LMA	-.099*	- 9.43	- 1,760
Nonmetropolitan LMA	—	—	—
Intercept	6.368		583

Mean Salary = $18,673 N = 16,173 R = .7605 F-Statistic = 1313.389
* = Statistical Significance at 0.10 Level S.E.E. = .1528

The salary of the typical administrator is simulated from this equation. Variables on the first page of this table are evaluated at the state average value and variables on the second page are evaluated at the specific value for the school district. The figures in the column, Percentage Effect Salaries, represent the percentage effect on administrators' salaries for the dummy variables (education, assignment, appointment, sex, age and labor market area) and the elasticity for the variables in natural log or percentage form. For the variables of experience, administrators per 1,000 students and test score, that column reflects the percentage effect of a one unit increase.

Table B5

DETERMINANTS OF MEDIAN TEACHERS' SALARIES
IN NEW YORK STATE SCHOOL DISTRICTS, 1977-78
[Dependent Variable = Log(e) (Median Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: MA Degree or Greater (percent)	.001*	.001	0
Experience: Six Years or Greater (percent)	.004*	.004	0
Appointment: Tenured (percent)	.002	.002	0
Appointment: Probationary (percent)	.001	.001	0
Sex: Male (percent)	.002*	.002	0
PROFESSIONAL ENVIRONMENT			
Teachers Per 1,000 Students	-.002	-.190	- 31
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.053*	.053	8
Log(e) Gross Income Per Return	.138*	.138	21
STUDENTS' CHARACTERISTICS			
Combined Reading/Math Test Score	.001*	.010	15
Handicapped Students (percent)	.073*	.073	11
Pupils with Special Education Needs (percent)	.034	.034	5
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.142*	.142	22
Log(e) District Size Squared	-.007*	- .014	- 2
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.015*	.015	2
Log(e) Full Value Per Square Mile	-.004	- .004	- 1

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
New York City LMA	.196*	21.65	3,342
Nassau-Suffolk LMA	.151*	16.30	2,516
Albany-Schenectady-Troy LMA	-.019	- 1.88	- 290
Binghamton LMA	-.082*	- 7.87	- 1,215
Buffalo LMA	.001	.10	15
Elmira LMA	-.081*	- 7.78	- 1,201
Poughkeepsie LMA	.032	3.25	502
Rochester LMA	.027*	2.74	422
Syracuse LMA	-.012	- 1.19	- 184
Utica-Rome LMA	-.028*	- 2.76	- 426
Nonmetropolitan LMA	—	—	—
Intercept	6.452		$ 634

Mean Salary = $15,434 N = 653 R = .9063 F-Statistic = 242.560
* = Statistical Significance at 0.10 Level S.E.E. = .0648

Table B6

DETERMINANTS OF MEDIAN ADMINISTRATORS' SALARIES
IN NEW YORK STATE SCHOOL DISTRICTS, 1977-78
[Dependent Variable = Log(e) (Median Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: MA Degree or Greater (percent)	.000	.000	0
Experience: Six Years or Greater (percent)	.004*	.004	1
Appointment: Tenured (percent)	.001	.001	0
Appointment: Substitute (percent)	.007*	.007	1
Appointment: Probationary (percent)	-.006	- .006	- 1
Appointment: Contract (percent)	.002*	.002	0
Sex: Male (percent)	.003*	.003	1
PROFESSIONAL ENVIRONMENT			
Administrators Per 1,000 Students	-.000	.000	0
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	-.047*	- .047	- 9
Log(e) Gross Income Per Return	.110*	.110	21
STUDENTS' CHARACTERISTICS			
Combined Reading/Math Test Score	.001*	.100	20
Handicapped Students (percent)	.233*	.233	46
Pupils with Special Education Needs (percent)	-.050	- .050	- 10
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.531*	.531	104
Log(e) District Size Squared	-.027*	- .051	- 10
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.014	.014	3
Log(e) Full Value Per Square Mile	-.001	- .001	- 0

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
New York City LMA	.204*	22.63	4,420
Nassau-Suffolk LMA	.141*	15.14	2,957
Albany-Schenectady-Troy LMA	-.035	- 3.44	- 672
Binghamton LMA	-.030	- 2.96	- 577
Buffalo LMA	.039	3.98	777
Elmira LMA	-.052	- 5.07	- 990
Poughkeepsie LMA	.027	2.74	535
Rochester LMA	.031	3.15	615
Syracuse LMA	-.019	- 1.88	- 368
Utica-Rome LMA	-.020	- 1.98	- 387
Nonmetropolitan LMA	—	—	—
Intercept	5.128		$ 169

Mean Salary = $19,531 N = 617 R = .7735 F-Statistic = 74.513
* = Statistical Significance at 0.10 Level S.E.E. = .1152

Table B7

DETERMINANTS OF MEDIAN TEACHERS' SALARIES
IN NEW YORK STATE SCHOOL DISTRICTS, 1974-75
[Dependent Variable = Log(e) (Median Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: MA Degree or Greater (percent)	.002*	.002	0
Experience: Six Years or Greater (percent)	.003*	.003	0
Appointment: Tenured (percent)	.002	.002	0
Appointment: Probationary (percent)	-.000	- .000	- 0
Sex: Male (percent)	.001*	.001	0
PROFESSIONAL ENVIRONMENT			
Teachers Per 1,000 Students	-.001	- .190	- 24
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.053*	.053	7
Log(e) Gross Income Per Return	.091*	.091	12
STUDENTS' CHARACTERISTICS			
Combined Reading/Math Test Score	.000	.000	0
Handicapped Students (percent)	.118*	.118	15
Pupils with Special Education Needs (percent)	-.028	- .028	- 4
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.082*	.082	11
Log(e) District Size Squared	-.004*	- .008	- 1
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.010*	.010	1
Log(e) Full Value Per Square Mile	-.008*	- .008	- 1

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
New York City LMA	.182*	19.92	2,568
Nassau-Suffolk LMA	.148*	15.95	2,052
Albany-Schenectady-Troy LMA	-.012	- 1.19	- 153
Binghamton LMA	-.051*	- 4.97	- 640
Buffalo LMA	-.013	- 1.29	- 166
Elmira LMA	-.074*	- 7.13	- 918
Poughkeepsie LMA	.043*	4.39	565
Rochester LMA	.039*	3.98	512
Syracuse LMA	-.045*	- 4.40	- 566
Utica-Rome LMA	-.062*	- 6.01	- 773
Nonmetropolitan LMA	—	—	—
Intercept	7.220		$ 1,366

Mean Salary = $12,864 N = 606 R = .8917 F-Statistic = 191.060
* = Statistical Significance at 0.10 Level S.E.E. = .0632

Table B8

DETERMINANTS OF MEDIAN ADMINISTRATORS' SALARIES
IN NEW YORK STATE SCHOOL DISTRICTS, 1974-75
[Dependent Variable = Log(e) (Median Salary)]

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
PERSONAL CHARACTERISTICS			$
Education: MA Degree or Greater (percent)	.001*	.001	0
Experience: Six Years or Greater (percent)	.005*	.005	1
Appointment: Tenured (percent)	-.000	- .000	- 0
Appointment: Substitute (percent)	.001	.001	0
Appointment: Probationary (percent)	.001	.001	0
Appointment: Contract (percent)	-.001	- .001	- 0
	-.001	- .001	- 0
Sex: Male (percent)	.002*	.002	0
PROFESSIONAL ENVIRONMENT			
Administrators Per 1,000 Students	.000	.000	0
FISCAL CAPACITY			
Log(e) Full Value Per Pupil	.062*	.062	10
Log(e) Gross Income Per Return	.103*	.103	16
STUDENTS' CHARACTERISTICS			
Combined Reading/Math Test Score	-.001	- .099	- 16
Handicapped Students (percent)	.069	.069	11
Pupils with Special Education Needs (percent)	.024	.024	4
SCHOOL DISTRICT CHARACTERISTICS			
Log(e) District Size	.486*	.486	78
Log(e) District Size Squared	-.025*	- .050	- 8
REGIONAL CHARACTERISTICS			
Log(e) Population Density in County	.018*	.018	3
Log(e) Full Value Per Square Mile	-.003	- .003	- 0

Variables	Estimated Coefficient	Percentage Effect Salaries	Absolute Effect Salaries
New York City LMA	.166*	18.06	2,891
Nassau-Suffolk LMA	.119*	12.64	2,023
Albany-Schenectady-Troy LMA	-.005	- .49	- 80
Binghamton LMA	.030	3.05	488
Buffalo LMA	.007	.70	112
Elmira LMA	.010	1.01	161
Poughkeepsie LMA	.057	5.86	939
Rochester LMA	.032	3.25	521
Syracuse LMA	-.023	- 2.27	- 364
Utica-Rome LMA	-.051*	- 4.97	- 796
Nonmetropolitan LMA	—	—	—
Intercept	5.212		183

Mean Salary = $16,008 N = 578 R = .8007 F-Statistic = 81.848
* = Statistical Significance at 0.10 Level S.E.E. = .1098

Table B9

COST OF EDUCATION INDEX FOR A SAMPLE OF SCHOOL DISTRICTS, 1974-75
(based on the market price schedule calculated for individuals)

	Teacher Index	Administrator Index	Cost of Education Index
Albany	.97	.97	.97
Bay Shore	1.11	1.09	1.08
Buffalo	1.01	.98	1.00
Camden	.85	.83	.89
Canastota	.87	.87	.90
Chenango Forks	.87	.89	.90
Great Neck	1.11	1.09	1.08
Kenmore	.99	.97	.99
Levittown	1.13	1.10	1.10
Long Beach	1.13	1.08	1.09
Mount Vernon	1.16	1.13	1.12
Newburg	.96	.95	.97
New York City	1.14	1.09	1.10
Niskayuna	.94	.95	.95
Oswego	.89	.89	.92
Peru	.93	.92	.94
Rochester	1.04	1.01	1.03
Roosevelt	1.12	1.07	1.09
Salamanca	.91	.90	.93
Syracuse	.93	.91	.94
West Irondequoit	.99	.98	.99
White Plains	1.14	1.12	1.11
Yonkers	1.17	1.14	1.12

Table B10

COST OF EDUCATION INDEX FOR A SAMPLE OF SCHOOL DISTRICTS, 1974-75
(based on statistical analysis for school district measures)

	Teacher Index	Administrator Index	Cost of Education Index
Albany	.99	1.10	1.01
Bay Shore	1.17	1.25	1.14
Buffalo	1.01	1.09	1.01
Camden	.92	.97	.95
Canastota	.92	.97	.95
Chenango Forks	.93	1.04	.96
Great Neck	1.18	1.29	1.15
Kenmore	.99	1.13	1.01
Levittown	1.19	1.30	1.16
Long Beach	1.18	1.27	1.15
Mount Vernon	1.22	1.34	1.18
Newburg	.99	1.10	1.01
New York City	1.18	.92	1.11
Niskayuna	.98	1.07	1.00
Oswego	.95	1.02	.97
Peru	.97	1.02	.98
Rochester	1.05	1.14	1.05
Roosevelt	1.18	1.24	1.14
Salamanca	.96	.96	.97
Syracuse	.97	1.08	.99
West Irondequoit	1.05	1.12	1.04
White Plains	1.21	1.32	1.17
Yonkers	1.22	1.33	1.18

APPENDIX C

COST OF EDUCATION INDEX FOR NEW YORK STATE

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
ALBANY				
ALBANY	10100	.96	.95	.97
BERNE-KNOX-WES	10201	.89	.85	.91
BETHLEHEM	10306	.92	.90	.94
RAVENA COEYMAN	10402	.91	.89	.93
COHOES	10500	.91	.89	.93
S. COLONIE	10601	.94	.93	.95
N. COLONIE	10605	.93	.92	.94
MENANDS CSD	10615	.78	.72	.83
MAPLEWOOD	10622	.77	.70	.82
GREEN ISLAND	10701	.82	.76	.85
GUILDERLAND	10802	.93	.91	.94
VOORHEESVILLE	11003	.88	.85	.91
WATERVLIET	11200	.88	.85	.91
ALLEGANY				
ALFRED-ALMOND	20101	.85	.83	.88
BELMONT	20501	.83	.80	.87
ANDOVER	20601	.82	.80	.86
ANGELICA	20701	.81	.78	.85
BELFAST	20801	.84	.80	.87
BOLIVAR	21001	.84	.82	.88
CANASERAGA	21102	.82	.78	.86
CUBA	21501	.86	.84	.89
FRIENDSHIP	21601	.84	.80	.87
FILLMORE	22001	.86	.84	.89
WHITESVILLE	22101	.81	.76	.85
RUSHFORD	22301	.82	.79	.86
SCIO	22401	.83	.79	.86
WELLSVILLE	22601	.89	.88	.92
RICHBURG	22901	.82	.78	.86
BROOME				
CHENANGO FORKS	30101	.83	.86	.88
BINGHAMTON	30200	.87	.92	.91
HARPURSVILLE	30501	.82	.84	.87
SUSQUEHANNA VA	30601	.83	.86	.88
CHENANGO-VALLE	30701	.84	.86	.88
MAINE-ENDWELL	31101	.85	.88	.89
DEPOSIT	31301	.81	.81	.85
WHITNEY POINT	31401	.85	.87	.89
UNION-ENDICOTT	31501	.86	.90	.90
JOHNSON CITY	31502	.84	.87	.88
VESTAL	31601	.86	.90	.90
WINDSOR	31701	.83	.85	.87
CATTARAUGUS				
ALLEGANY	40101	.87	.86	.90
W. VALLEY	40204	.83	.79	.87
LIMESTONE	40301	.80	.76	.84
ELLICOTTVILLE	40901	.86	.84	.89
FRANKLINVILLE	41101	.87	.84	.89
HINSDALE	41401	.84	.82	.87
LITTLE VALLEY	41801	.85	.82	.88
CATTARAUGUS	42301	.86	.84	.89
OLEAN	42400	.91	.91	.93
GOWANDA	42801	.89	.89	.91

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
PORTVILLE	42901	.88	.87	.91
RANDOLPH	43001	.87	.86	.90
SALAMANCA	43200	.89	.88	.92
YORKSHIRE-PION	43501	.91	.92	.93
CAYUGA				
AUBURN	50100	.93	.94	.95
WEEDSPORT	50301	.86	.85	.90
CATO-MERIDIAN	50401	.87	.86	.90
SOUTHERN CAYUG	50701	.87	.86	.90
PORT BYRON	51101	.89	.88	.91
MORAVIA	51301	.88	.87	.91
UNION SPRINGS	51901	.88	.87	.91
CHAUTAUQUA				
SOUTHWESTERN	60201	.89	.89	.92
FREWSBURG	60301	.86	.85	.89
CASSADAGA VALL	60401	.90	.88	.92
MAYVILLE	60501	.85	.82	.88
CHAUTAUQUA	60502	.82	.78	.86
PINE VALLEY	60601	.87	.85	.90
CLYMER	60701	.84	.82	.88
DUNKIRK	60800	.91	.91	.93
SEMUS POINT	61001	.86	.84	.89
FALCONER	61101	.88	.88	.91
SILVER CREEK	61501	.88	.86	.91
FORESTVILLE	61503	.86	.83	.89
PANAMA	61601	.86	.83	.89
JAMESTOWN	61700	.93	.94	.95
FREDONIA	62201	.90	.89	.92
BROCTON	62301	.86	.84	.89
RIPLEY	62401	.86	.81	.88
SHERMAN	62601	.84	.81	.87
WESTFIELD	62901	.87	.85	.90
CHEMUNG				
ELMIRA	70600	.88	.91	.91
HORSEHEADS	70901	.86	.89	.90
ELMIRA HEIGHTS	70902	.82	.82	.86
CHENANGO				
AFTON	80101	.85	.84	.89
BAINBRIDGE	80201	.87	.86	.90
GREENE	80601	.89	.89	.92
MOUNT UPTON	80701	.80	.77	.84
NEW BERLIN	81001	.85	.83	.88
S. NEW BERLIN	81002	.82	.79	.86
NORWICH	81200	.90	.91	.93
GEORGETOWN	81401	.83	.81	.87
OXFORD	81501	.87	.86	.90
SHERBURNE-EARL	82001	.91	.89	.93
CLINTON				
AUSABLE VALLEY	90201	.90	.89	.92
BEEKMANTOWN	90301	.90	.90	.92
NORTHEASTERN	90501	.89	.88	.91
CHAZY	90601	.84	.81	.87
DANNEMORA	90801	.78	.74	.83
NORTHERN ADIRO	90901	.88	.87	.91
PERU	91101	.91	.91	.93

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
PLATTSBURGH	91200	.90	.90	.93
SARANAC	91401	.89	.88	.91
COLUMBIA				
COPAKE-TACONIC	100501	.89	.89	.91
GERMANTOWN	100902	.85	.83	.88
CHATHAM	101001	.88	.88	.91
HUDSON	101300	.91	.91	.93
KINDERHOOK	101401	.90	.90	.92
NEW LEBANON	101601	.86	.83	.89
CORTLAND				
CINCINNATUS	110101	.86	.83	.89
CORTLAND	110200	.91	.91	.93
MCGRAW	110304	.86	.83	.89
HOMER	110701	.90	.90	.92
MARATHON	110901	.86	.84	.89
DELAWARE				
ANDES	120102	.78	.74	.83
DOWNSVILLE	120301	.82	.79	.86
CHARLOTTE VALL	120401	.83	.80	.87
DELHI	120501	.86	.85	.89
FRANKLIN	120701	.81	.78	.85
HANCOCK	120906	.86	.84	.89
MARGARETVILLE	121401	.84	.82	.88
GRAND GORGE	121501	.77	.72	.82
ROXBURY	121502	.80	.76	.84
SIDNEY	121601	.88	.88	.91
STAMFORD	121701	.84	.80	.87
S. KORTRIGHT	121702	.83	.80	.87
WALTON	121901	.87	.86	.90
DUTCHESS				
BEACON	130200	.98	1.00	.99
DOVER	130502	.96	.96	.97
HYDE PARK	130801	1.00	1.02	1.00
NORTHEAST	131101	.94	.93	.96
PAWLING	131201	.93	.93	.95
PINE PLAINS	131301	.95	.96	.97
POUGHKEEPSIE	131500	1.01	1.03	1.01
ARLINGTON	131601	1.01	1.04	1.01
SPACKENKILL	131602	.96	.97	.97
RED HOOK	131701	.96	.97	.97
RHINEBECK	131801	.94	.94	.96
WAPPINGERS	132101	1.02	1.06	1.02
MILLBROOK	132201	.94	.93	.95
ERIE				
ALDEN	140101	.94	.92	.96
WILLIAMSVILLE	140203	.99	.99	.99
SWEET HOME	140207	.98	.97	.98
EGGERTSVILLE	140213	.90	.86	.92
AMHERST-SNYDER	140218	.90	.87	.92
E. AURORA	140301	.95	.93	.96
BUFFALO	140600	1.03	1.04	1.02
CHEEKTOWAGA	140701	.95	.94	.96
CHEEK-MARYVALE	140702	.97	.96	.98
CLEVELAND HILL	140703	.95	.92	.96
DEPEW	140707	.96	.95	.97

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
CHEEK-SLOAN	140709	.94	.92	.95
CLARENCE	140801	.96	.94	.96
SPRINGVILLE	141101	.96	.94	.97
EDEN	141201	.94	.92	.95
IROQUOIS	141301	.96	.95	.97
EVANS-BRANT	141401	.97	.96	.97
GRAND ISLAND	141501	.96	.95	.97
HAMBURG	141601	.97	.96	.98
FRONTIER	141604	.97	.97	.98
HOLLAND	141701	.93	.90	.94
LACKAWANNA	141800	.97	.96	.98
LANCASTER	141901	.98	.97	.98
AKRON	142101	.93	.90	.94
N. COLLINS	142201	.91	.88	.93
ORCHARD PARK	142301	.97	.97	.98
TONAWANDA	142500	.96	.95	.97
KENMORE-TONAWA	142601	.99	1.00	1.00
W. SENECA	142801	.99	1.00	.99
ESSEX				
CROWN POINT	150203	.82	.78	.86
ELIZABETHTOWN	150301	.82	.78	.86
KEENE	150601	.75	.71	.81
MINERVA	150801	.79	.75	.83
MORIAH	150901	.86	.86	.89
NEWCOMB	151001	.77	.72	.82
LAKE PLACID	151102	.85	.83	.89
SCHROON LAKE	151401	.80	.77	.84
TICONDEROGA	151501	.87	.86	.90
WESTPORT	151601	.79	.76	.84
WILLSBORO	151701	.84	.82	.88
FRANKLIN				
TUPPER LAKE	160101	.87	.86	.90
CHATEAUGAY	160801	.85	.83	.88
SALMON RIVER	161201	.88	.88	.91
SARANAC LAKE	161401	.89	.89	.92
MALONE	161501	.90	.91	.92
BRUSHTON-MOIRA	161601	.85	.85	.89
ST REGIS FALLS	161801	.82	.80	.86
FULTON				
BROADALBIN	170201	.86	.84	.89
WHEELERVILLE	170301	.78	.73	.83
GLOVERSVILLE	170500	.92	.93	.94
JOHNSTOWN	170600	.89	.89	.92
MAYFIELD	170801	.88	.86	.90
NORTHVILLE	170901	.85	.83	.88
OPPENHEIM-EPHR	171001	.83	.80	.87
PERTH	171101	.85	.83	.88
STRATFORD	171201	.81	.76	.85
GENESEE				
ALEXANDER	180202	.88	.87	.91
BATAVIA	180300	.91	.91	.93
BYRON-BERGEN	180701	.88	.87	.91
ELBA	180901	.84	.82	.88
LE ROY	181001	.88	.87	.91

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
OAKFIELD-ALABA	181101	.87	.86	.90
PAVILION	181201	.87	.85	.90
PEMBROKE	181302	.89	.88	.92
GREENE				
CAIRO-DURHAM	190301	.87	.86	.90
CATSKILL	190401	.89	.88	.91
COXSACKIE-ATHE	190501	.88	.87	.91
GREENVILLE	190701	.87	.87	.90
HUNTER-TANNERS	190901	.83	.80	.87
WINDHAM-ASHLAN	191401	.83	.80	.87
HAMILTON				
INDIAN LAKE	200401	.78	.75	.83
LAKE PLEASANT	200601	.73	.69	.79
LONG LAKE	200701	.75	.71	.80
WELLS	200901	.77	.72	.82
HERKIMER				
N. CANADA VALL	210302	.82	.79	.86
FRANKFORT-SCHU	210402	.83	.80	.87
ILION	210501	.85	.82	.88
MOHAWK	210502	.83	.80	.87
HERKIMER	210601	.85	.82	.88
LITTLE FALLS	210800	.83	.80	.87
DOLGEVILLE	211002	.81	.77	.85
POLAND	211103	.81	.78	.85
VAN HORNESVILL	211701	.78	.72	.82
TOWN OF WEBB	211901	.78	.73	.82
BRIDGEWATER	212001	.84	.82	.88
JEFFERSON				
S. JEFFERSON	220101	.89	.88	.91
ALEXANDRIA	220202	.85	.83	.89
INDIAN RIVER	220301	.90	.89	.92
GENERAL BROWN	220401	.88	.88	.91
THOUSAND ISLAN	220701	.87	.85	.90
BELLEVILLE	220802	.83	.80	.87
HENDERSON	220903	.78	.74	.83
SACKETS HARBOR	221001	.84	.81	.88
LYME	221301	.81	.77	.85
LAFARGEVILLE	221401	.83	.81	.87
WATERTOWN	222000	.94	.94	.95
CARTHAGE	222201	.91	.91	.93
LEWIS				
COPENHAGEN	230201	.83	.81	.87
HARRISVILLE	230301	.84	.82	.87
LOWVILLE	230901	.88	.88	.91
S. LEWIS	231101	.88	.88	.91
BEAVER RIVER	231301	.86	.85	.89
LIVINGSTON				
AVON	240101	.93	.92	.95
CALEDONIA-MUMF	240201	.93	.92	.95
GENESEO	240401	.94	.90	.95
LIVONIA	240801	.95	.95	.96
MOUNT MORRIS	240901	.93	.90	.94
DANSVILLE	241001	.97	.96	.98
DALTON-NUNDA	241101	.93	.91	.94
YORK	241701	.93	.91	.94
MADISON				
BROOKFIELD	250109	.79	.72	.83

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
CAZENOVIA	250201	.88	.86	.91
DE RUYTER	250301	.83	.78	.87
MORRISVILLE	250401	.86	.82	.89
HAMILTON	250701	.84	.79	.87
CANASTOTA	250901	.88	.86	.91
MADISON	251101	.84	.80	.88
ONEIDA	251300	.90	.88	.92
STOCKBRIDGE	251501	.85	.80	.88
CHITTENANGO	251601	.90	.88	.92
MONROE				
BRIGHTON	260101	1.00	.99	1.00
GATES CHILI	260401	1.01	1.01	1.01
GREECE	260501	1.02	1.03	1.02
E. IRONDEQUOIT	260801	.99	.98	.99
W. IRONDEQUOIT	260803	1.00	1.00	1.00
HONEOYE FALLS	260901	.97	.94	.97
SPENCERPORT	261001	1.00	.99	1.00
HILTON	261101	1.00	.99	1.00
PENFIELD	261201	1.01	1.00	1.01
FAIRPORT	261301	1.01	1.01	1.01
E. ROCHESTER	261313	.97	.93	.97
PITTSFORD	261401	1.00	1.00	1.00
CHURCHVILLE-CH	261501	.99	.98	.99
ROCHESTER	261600	1.07	1.08	1.05
RUSH-HENRIETTA	261701	1.03	1.02	1.02
BROCKPORT	261801	.99	.98	.99
WEBSTER	261901	1.02	1.02	1.01
WHEATLAND-CHIL	262001	.97	.93	.97
MONTGOMERY				
AMSTERDAM	270100	.93	.92	.94
CANAJOHARIE	270301	.87	.85	.90
FONDA-FULTONVI	270601	.88	.86	.91
FORT PLAIN	270701	.87	.84	.90
ST JOHNSVILLE	271102	.86	.82	.89
NASSAU				
GLEN COVE	280100	1.13	1.08	1.09
HEMPSTEAD	280201	1.15	1.10	1.11
UNIONDALE	280202	1.13	1.09	1.10
E. MEADOW	280203	1.14	1.10	1.10
N. BELLMORE	280204	1.09	1.03	1.06
LEVITTOWN	280205	1.15	1.12	1.11
SEAFORD	280206	1.10	1.06	1.07
BELLMORE	280207	1.07	1.00	1.04
ROOSEVELT	280208	1.14	1.09	1.10
FREEPORT	280209	1.13	1.09	1.10
BALDWIN	280210	1.14	1.10	1.10
OCEANSIDE	280211	1.14	1.10	1.10
MALVERNE	280212	1.10	1.04	1.07
V STR THIRTEEN	280213	1.07	1.02	1.05
HEWLETT-WOODME	280214	1.12	1.07	1.08
LAWRENCE	280215	1.12	1.08	1.09
ELMONT	280216	1.11	1.06	1.08
FRANKLIN SQUAR	280217	1.08	1.01	1.05

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
GARDEN CITY	280218	1.11	1.06	1.08
E. ROCKAWAY	280219	1.08	1.01	1.05
LYNBROOK	280220	1.10	1.06	1.07
ROCKVILLE CENT	280221	1.11	1.06	1.08
FLORAL PARK	280222	1.06	.99	1.04
BANTAGH	280223	1.11	1.06	1.08
V STR TWENTY-F	280224	1.06	.99	1.04
MERRICK	280225	1.09	1.03	1.06
ISLAND TREES	280226	1.11	1.06	1.07
N. HEMPSTEAD	280227	1.10	1.05	1.07
N. MERRICK	280229	1.04	.97	1.03
VALLEY STR UF	280230	1.06	.99	1.04
ISLAND PARK	280231	1.10	1.03	1.07
LONG BEACH	280300	1.14	1.10	1.10
WESTBURY	280401	1.15	1.09	1.11
E. WILLISTON	280402	1.06	1.00	1.04
ROSLYN	280403	1.10	1.05	1.07
PORT WASHINGTO	280404	1.12	1.07	1.08
NEW HYDE PARK	280405	1.06	.99	1.04
MANHASSET	280406	1.10	1.04	1.07
GREAT NECK	280407	1.14	1.10	1.10
HERRICKS	280409	1.11	1.06	1.08
MINEOLA	280410	1.11	1.06	1.08
CARLE PLACE	280411	1.08	1.01	1.05
NORTH SHORE	280501	1.10	1.04	1.07
SYOSSET	280502	1.13	1.09	1.09
LOCUST VALLEY	280503	1.10	1.05	1.07
PLAINVIEW-OLD	280504	1.14	1.10	1.10
OYSTER BAY	280506	1.08	1.02	1.05
JERICHO	280515	1.09	1.04	1.06
HICKSVILLE	280517	1.14	1.10	1.10
PLAINEDGE	280518	1.12	1.07	1.09
BETHPAGE	280521	1.11	1.07	1.08
FARMINGDALE	280522	1.14	1.10	1.10
MASSAPEQUA	280523	1.15	1.12	1.11
AVERAGE				
NEW YORK CITY	300000	1.17	1.12	1.13
NIAGARA				
LEWISTON-PORTE	400301	.96	.95	.97
LOCKPORT	400400	.97	.97	.98
NEWFANE	400601	.94	.92	.95
NIAGARA-WHEATF	400701	.97	.96	.97
NIAGARA FALLS	400800	1.00	1.00	1.00
N. TONAWANDA	400900	.97	.97	.98
STARPOINT	401001	.93	.92	.95
ROYALTON-HARTL	401201	.94	.93	.95
BARKER	401301	.92	.90	.94
WILSON	401501	.93	.91	.94
ONEIDA				
ORISKANY FALLS	410207	.76	.69	.81
ADIRONDACK	410401	.85	.81	.88
CAMDEN	410601	.87	.84	.90
CLINTON	411101	.85	.81	.88

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
NEW HARTFORD	411501	.87	.85	.90
NEW YORK MILLS	411504	.82	.77	.86
CHADWICKS	411508	.78	.72	.82
SAUQUOIT VALLE	411602	.84	.79	.87
REMSEN	411701	.81	.75	.85
ROME	411800	.91	.89	.93
WATERVILLE	411901	.83	.79	.87
SHERRILL	412000	.87	.84	.90
HOLLAND PATENT	412201	.86	.83	.89
UTICA	412300	.91	.90	.93
SYLVAN VERONA	412520	.74	.65	.79
WESTMORELAND	412801	.84	.80	.87
ORISKANY	412901	.82	.78	.86
WHITESBORO	412902	.89	.87	.91
ONONDAGA				
W. GENESEE	420101	.92	.91	.94
N. SYRACUSE	420303	.94	.93	.95
E. SYRACUSE	420401	.92	.90	.93
JAMESVILLE-DEW	420411	.90	.88	.92
JORDAN-ELBRIDG	420501	.89	.86	.91
FABIUS-POMPEY	420601	.87	.82	.90
WESTHILL	420701	.88	.84	.91
SOLVAY	420702	.89	.85	.91
LA FAYETTE	420807	.87	.83	.89
BALDWINSVILLE	420901	.92	.90	.94
FAYETTEVILLE	421001	.91	.88	.93
MARCELLUS	421101	.89	.86	.92
ONONDAGA	421201	.87	.82	.89
LIVERPOOL	421501	.93	.92	.95
LYNCOURT	421504	.82	.75	.86
SKANEATELES	421601	.89	.85	.91
SYRACUSE	421800	.96	.95	.97
TULLY	421902	.87	.82	.89
ONTARIO				
CANANDAIGUA	430300	.98	.97	.98
E. BLOOMFIELD	430501	.94	.92	.95
GENEVA	430700	.98	.97	.98
GORHAM-MIDDLES	430901	.96	.94	.97
MANCHESTER-SHO	431101	.93	.92	.95
NAPLES	431201	.93	.90	.94
PHELPS-CLIFTON	431301	.96	.96	.97
HONEOYE	431401	.93	.91	.94
VICTOR	431701	.97	.96	.97
ORANGE				
WASHINGTONVILL	440102	.92	.92	.94
CHESTER	440201	.87	.84	.90
CORNWALL	440301	.90	.89	.92
PINEBUSH	440401	.92	.93	.94
GOSHEN	440601	.91	.90	.93
HIGHLAND FALLS	440901	.89	.87	.91
MIDDLETOWN	441000	.94	.93	.95
MINISINK VALLE	441101	.91	.91	.93
MONROE-WOODBUR	441201	.94	.94	.95

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
VALLEY	441361	.92	.93	.94
NEWBURGH	441600	.95	.97	.97
PORT JERVIS	441800	.92	.91	.93
TUXEDO	441903	.80	.76	.84
WARWICK VALLEY	442101	.90	.90	.93
GREENWOOD LAKE	442111	.84	.80	.88
FLORIDA	442115	.85	.81	.88
ORLEANS				
ALBION	450101	.97	.97	.98
KENDALL	450607	.93	.91	.94
HOLLEY	450704	.94	.93	.95
MEDINA	450801	.97	.96	.97
LYNDONVILLE	451001	.93	.91	.95
OSWEGO				
ALTMAR-PARISH	460102	.88	.85	.91
FULTON	460500	.92	.90	.93
HANNIBAL	460701	.88	.85	.91
CENTRAL SQUARE	460801	.92	.90	.93
MEXICO	460901	.90	.88	.92
OSWEGO	461300	.92	.91	.94
PULASKI	461801	.86	.83	.89
SANDY CREEK	461901	.87	.83	.89
PHOENIX	462001	.90	.88	.92
OTSEGO				
GILBERTSVILLE	470201	.80	.76	.84
CHERRY VALLEY	470301	.82	.80	.86
EDMESTON	470501	.84	.81	.87
LAURENS	470801	.82	.78	.85
SCHENEVUS	470901	.82	.79	.86
MILFORD	471101	.83	.79	.86
MORRIS	471201	.83	.79	.86
ONEONTA	471400	.90	.90	.92
OTEGO-UNADILLA	471601	.87	.86	.90
COOPERSTOWN	471701	.86	.85	.89
RICHFIELD SPWI	472001	.85	.84	.89
SPRINGFIELD	472201	.80	.76	.84
WORCESTER	472506	.83	.80	.86
PUTNAM				
MAHOPAC	480101	1.16	1.14	1.12
CARMEL	480102	1.16	1.14	1.12
HALDANE	480401	1.08	1.03	1.06
GARRISON	480404	1.00	.92	.99
PUTNAM VALLEY	480503	1.09	1.04	1.07
BREWSTER	480601	1.14	1.10	1.10
RENSSELAER				
BERLIN	490101	.89	.85	.91
BRUNSWICK COMM	490201	.77	.70	.82
BRUNSWICK CENT	490202	.89	.86	.91
E. GREENBUSH	490301	.95	.94	.96
HOOSICK FALLS	490501	.88	.86	.91
LANSINGBURGH	490601	.91	.89	.93
WYNANTSKILL	490804	.82	.78	.86
RENSSELAER	491200	.88	.86	.91
AVERILL PARK	491301	.90	.89	.92
HOOSIC VALLEY	491401	.88	.84	.90

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
SCHODACK	491501	.87	.84	.90
TROY	491700	.94	.94	.95
ROCKLAND				
CLARKSTOWN	500101	1.18	1.16	1.14
NANUET	500108	1.13	1.09	1.09
HAVERSTRAW-STO	500201	1.19	1.17	1.14
S. ORANGETOWN	500301	1.16	1.13	1.12
NYACK	500304	1.16	1.12	1.12
PEARL RIVER	500308	1.14	1.10	1.10
RAMAPO	500401	1.16	1.14	1.12
E. RAMAPO	500402	1.20	1.18	1.15
STLAWRENCE				
BRASHER FALLS	510101	.88	.87	.91
CANTON	510201	.89	.88	.91
CLIFTON-FINE	510401	.88	.86	.91
COLTON-PIERREP	510501	.84	.81	.87
EDWARDS	510801	.81	.78	.85
GOUVERNEUR	511101	.89	.90	.92
HAMMOND	511201	.81	.77	.85
HERMON-DEKALB	511301	.84	.81	.88
LISBON	511602	.85	.83	.88
MADRID-WADDING	511901	.87	.86	.90
MASSENA	512001	.91	.92	.93
MORRISTOWN	512101	.83	.81	.87
NORWOOD-NORFOL	512201	.89	.89	.92
OGDENSBURG	512300	.90	.90	.93
HEUVELTON	512404	.85	.83	.88
PANISHVILLE	512501	.85	.82	.88
POTSDAM	512902	.88	.89	.91
KNOX MEMORIAL	513101	.82	.79	.86
SARATOGA				
BURNT HILLS	520101	.91	.90	.93
SCHENENDEHOWA	520302	.93	.93	.95
CORINTH	520401	.88	.86	.90
GALWAY	520701	.87	.84	.90
MECHANICVILLE	521200	.88	.85	.91
BALLSTON SPA	521301	.91	.90	.93
S. GLENS FALLS	521401	.91	.90	.93
SCHUYLERVILLE	521701	.89	.86	.91
SARATOGA SPRIN	521800	.93	.93	.95
STILLWATER	522001	.87	.84	.90
WATERFORD-HALF	522101	.86	.83	.89
SCHENECTADY				
DUANESBURG	530101	.86	.81	.89
SCOTIA-GLENVIL	530202	.92	.90	.93
NISKAYUNA	530301	.92	.90	.94
SCHALMONT	530501	.91	.88	.93
ROTT-MOHONASEN	530503	.91	.90	.93
ROTT-DRAPER	530514	.87	.84	.90
SCHENECTADY	530600	.96	.96	.97
SCHOHARIE				
COBLESKILL	540401	.89	.88	.91
GILBOA-CONESVI	540801	.82	.80	.86
JEFFERSON	540901	.80	.76	.84
MIDDLEBURGH	541001	.87	.85	.90

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
RICHMONDVILLE	541101	.83	.79	.87
SCHONARIE	541201	.88	.87	.90
SHARON SPRINGS	541401	.81	.78	.85
SCHUYLER				
ODESSA-MONTOUR	550101	.89	.88	.91
WATKINS GLEN	550301	.89	.89	.92
SENECA				
S. SENECA	560501	.88	.86	.90
ROMULUS	560603	.86	.83	.89
SENECA FALLS	560701	.89	.88	.91
WATERLOO	561001	.90	.90	.92
BORDER CITY	561005	.76	.70	.81
STEUBEN				
ADDISON	570101	.89	.88	.91
AVOCA	570201	.85	.82	.88
SAVONA	570301	.83	.80	.87
BATH	570302	.90	.89	.92
BRADFORD	570401	.83	.79	.86
CAMPBELL	570602	.85	.82	.88
CANISTEO	570701	.86	.85	.89
CONOCTON	570905	.81	.77	.85
CORNING	571000	.93	.95	.95
GREENWOOD	571501	.80	.76	.84
HORNELL	571800	.90	.91	.93
ARKPORT	571901	.84	.81	.87
JASPER	572101	.82	.78	.86
PRATTSBURG	572301	.82	.79	.86
TROUPSBURG	572701	.81	.75	.85
HAMMONDSPORT	572901	.87	.85	.90
WAYLAND	573001	.88	.87	.91
SUFFOLK				
BABYLON	580101	1.08	1.03	1.05
W. BABYLON	580102	1.13	1.10	1.09
N. BABYLON	580103	1.13	1.11	1.10
LINDENHURST	580104	1.13	1.11	1.10
COPIAGUE	580105	1.13	1.09	1.09
AMITYVILLE	580106	1.12	1.08	1.09
DEER PARK	580107	1.13	1.11	1.10
WYANDANCH	580108	1.12	1.07	1.09
THREE VILLAGE	580201	1.14	1.11	1.10
BROOKHVN-COMSE	580203	1.12	1.09	1.09
S. COUNTRY	580204	1.13	1.09	1.09
SACHEM	580205	1.15	1.14	1.11
PORT JEFFERSON	580206	1.08	1.02	1.05
MOUNT SINAI	580207	1.06	1.00	1.04
MILLER PLACE	580208	1.08	1.03	1.05
ROCKY POINT	580209	1.08	1.03	1.06
MIDDLE COUNTRY	580211	1.15	1.13	1.11
MIDDLE ISLAND	580212	1.13	1.10	1.10
S. MANOR	580221	1.00	.93	.99
PATCHOGUE-MEDF	580224	1.14	1.12	1.11
WILLIAM FLOYD	580232	1.15	1.10	1.11
CENTER MORICHE	580233	1.05	.98	1.03
E. MORICHES	580234	1.00	.93	.99

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
E. HAMPTON	580301	1.07	1.00	1.04
AMAGANSETT	580303	.89	.77	.90
SPRINGS	580304	.96	.88	.96
SAG HARBOR	580305	1.01	.94	1.00
MONTAUK	580306	.96	.86	.96
ELWOOD	580401	1.10	1.06	1.07
COLD SPRING HA	580402	1.07	1.02	1.05
HUNTINGTON	580403	1.13	1.10	1.10
NORTHPORT	580404	1.13	1.11	1.10
HALF HOLLOW HI	580405	1.13	1.11	1.10
HARBORSFIELD	580406	1.11	1.08	1.08
COMMACK	580410	1.14	1.11	1.10
S. HUNTINGTON	580413	1.13	1.11	1.10
BAY SHORE	580501	1.13	1.09	1.09
ISLIP	580502	1.11	1.07	1.08
E. ISLIP	580503	1.13	1.09	1.09
SAYVILLE	580504	1.10	1.07	1.07
BAYPORT-BLUE	580505	1.10	1.06	1.07
HAUPPAUGE	580506	1.12	1.09	1.09
CONNETQUOT	580507	1.14	1.12	1.11
W. ISLIP	580509	1.14	1.11	1.10
BRENTWOOD	580512	1.16	1.13	1.12
CENT ISLIP	580513	1.15	1.12	1.11
SHOERHAM-WAD	580601	1.07	1.02	1.05
RIVERHEAD	580602	1.12	1.08	1.08
SHELTER ISLAND	580701	.96	.86	.96
SMITHTOWN	580801	1.14	1.12	1.11
KINGS PARK	580805	1.12	1.08	1.09
RENSENBURG	580901	.91	.80	.92
WESTHAMPTON BE	580902	1.06	1.00	1.04
QUOGUE	580903	.87	.74	.89
HAMPTON BAYS	580905	1.06	1.00	1.04
SOUTHAMPTON	580906	1.07	1.01	1.04
BRIDGEHAMPTON	580909	.95	.85	.95
EASTPORT	580911	1.03	.96	1.01
TUCKAHOE	580913	.90	.78	.91
E. QUOGUE	580917	.96	.87	.96
OYSTERPONDS	581002	.87	.75	.89
FISHERS ISLAND	581004	.85	.73	.87
SOUTHOLD	581005	1.03	.96	1.02
MATTITUCK-CUTC	581009	1.05	.99	1.03
GREENPORT	581010	1.03	.96	1.02
SULLIVAN				
JEFFERSONVILLE	590201	.85	.83	.88
DELAWARE VALLE	590401	.84	.81	.87
FALLSBURG	590501	.87	.85	.90
ELDRED	590801	.83	.81	.87
LIBERTY	590901	.89	.88	.92
TRI-VALLEY	591201	.86	.85	.89
ROSCOE	591301	.81	.77	.85
LIVINGSTON MAN	591302	.85	.83	.89

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
MONTICELLO	591401	.92	.92	.94
NAMRONSBURG	591501	.83	.79	.86
TIOGA				
WAVERLY	600101	.83	.86	.87
CANDOR	600301	.80	.81	.85
NEWARK VALLEY	600402	.81	.84	.86
OWEGO APALACHI	600601	.85	.89	.89
SPENCER-VAN ET	600801	.81	.83	.86
TIOGA	600903	.80	.82	.85
TOMPKINS				
DRYDEN	610301	.89	.89	.92
GROTON	610501	.88	.86	.91
ITHACA	610600	.93	.93	.95
LANSING	610801	.87	.85	.90
NEWFIELD	610901	.87	.84	.89
TRUMANSBURG	611001	.88	.86	.91
ULSTER				
KINGSTON	620600	.94	.95	.95
HIGHLAND	620803	.89	.88	.92
RONDOUT VALLEY	620901	.92	.91	.94
MARLBORO	621001	.89	.89	.92
NEW PALTZ	621101	.89	.88	.92
ONTEORA	621201	.91	.91	.93
SAUGERTIES	621601	.91	.92	.93
WALLKILL	621801	.91	.91	.93
ELLENVILLE	622002	.90	.90	.93
WARREN				
BOLTON	630101	.82	.79	.86
N. WARREN	630202	.85	.84	.89
GLENS FALLS	630300	.90	.91	.92
HAGUE	630401	.77	.72	.82
JOHNSBURG	630601	.84	.81	.87
LAKE GEORGE	630701	.86	.85	.89
HADLEY-LUZERNE	630801	.87	.86	.90
QUEENSBURY	630902	.91	.91	.93
GLENS FALLS CO	630918	.76	.70	.81
WARRENSBURG	631201	.86	.85	.89
WASHINGTON				
ARGYLE	640101	.85	.83	.88
FORT ANN	640502	.84	.82	.88
FORT EDWARD	640601	.86	.85	.89
GRANVILLE	640701	.89	.88	.91
GREENWICH	640801	.87	.85	.90
HARTFORD	641001	.84	.81	.87
HUDSON FALLS	641301	.90	.91	.93
SALEM	641501	.84	.83	.88
CAMBRIDGE	641610	.87	.85	.90
WHITEHALL	641701	.87	.86	.90
WAYNE				
NEWARK	650101	.97	.98	.98
CLYDE-SAVANNAH	650301	.96	.94	.96
LYONS	650501	.97	.94	.97
MARION	650701	.95	.94	.96
WAYNE	650801	.98	.97	.98
PALMYRA-MACEDO	650901	.98	.98	.99
SODUS	651201	.98	.96	.99

		TEACHER INDEX	ADMINISTRATOR INDEX	COST OF EDUCATION RESOURCES INDEX
WILLIAMSON	651402	.95	.94	.96
N. ROSE-WOLCOT	651501	.98	.96	.98
RED CREEK	651503	.94	.92	.95
WESTCHESTER				
KATONAH-LEWISB	660101	1.14	1.09	1.10
BEDFORD	660102	1.16	1.12	1.12
CROTON-HARMON	660202	1.13	1.07	1.09
HENDRICK HUDSO	660203	1.14	1.10	1.10
EASTCHESTER	660301	1.14	1.10	1.10
TUCKAHOE	660302	1.08	1.00	1.05
BRONXVILLE	660303	1.09	1.03	1.06
UF OF TARRYTOW	660401	1.15	1.10	1.11
IRVINGTON	660402	1.12	1.06	1.08
DOBBS FERRY	660403	1.10	1.03	1.07
HASTINGS-ON-HU	660404	1.12	1.07	1.08
ARDSLEY	660405	1.12	1.08	1.09
EDGEMONT	660406	1.11	1.06	1.08
GREENBURGH	660407	1.16	1.12	1.12
ELMSFORD	660409	1.11	1.04	1.08
HARRISON	660501	1.16	1.12	1.11
MAMARONECK	660701	1.17	1.14	1.13
MOUNT PLEASANT	660801	1.15	1.10	1.11
POCANTICO HILL	660802	1.04	.94	1.02
VALHALLA	660805	1.11	1.05	1.07
PLEASANTVILLE	660809	1.12	1.06	1.08
MOUNT VERNON	660900	1.20	1.18	1.15
CHAPPAQUA	661004	1.14	1.10	1.10
NEW ROCHELLE	661100	1.20	1.17	1.15
ARMONK	661201	1.13	1.08	1.09
N. SALEM	661301	1.11	1.05	1.07
OSSINING	661401	1.17	1.13	1.13
BRIARCLIFF MAN	661402	1.09	1.03	1.06
PEEKSKILL	661500	1.17	1.12	1.12
PELHAM	661601	1.13	1.09	1.09
RYE	661800	1.13	1.08	1.09
RYE NECK	661901	1.11	1.05	1.08
PORT CHESTER	661904	1.17	1.12	1.12
BLIND BROOK	661905	1.09	1.02	1.06
SCARSDALE	662001	1.15	1.12	1.11
SOMERS	662101	1.13	1.08	1.10
WHITE PLAINS	662200	1.21	1.18	1.15
YONKERS	662300	1.22	1.21	1.17
LAKELAND	662401	1.17	1.15	1.13
YORKTOWN	662402	1.18	1.14	1.13
WYOMING				
ATTICA	670201	.89	.89	.92
LETCHWORTH	670401	.88	.87	.91
WYOMING	671002	.82	.78	.86
PERRY	671201	.88	.87	.90
WARSAW	671501	.87	.86	.90
YATES				
PENN YAN	680601	.90	.90	.93
DUNDEE	680801	.87	.85	.90